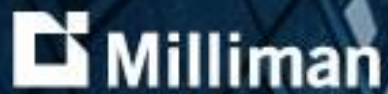


NOVEMBER 2021

Claim Variability Benchmarks

Quick Start Guide – v 2.1



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1. Release notes

RELEASE 2.1 ADDS NEW DATA AND CAPABILITIES

What's changed in CVB 2.1?

1. Benchmark loss development patterns (cvbLDFPatterns)

For the 7 data sets from Schedule P (i.e., Paid, Incurred, Reported, Closed, CWP, CWOP, Incurred + IBNR), new benchmarks for calendar year 2019 were added and all years combined were updated to include 2019 data. In addition, new benchmarks for all lines of business combined are now included.

2. Benchmark frequency patterns (cvbFreqPatterns)

For the 11 frequency ratio arrays, calendar year 2019 was added. In addition, new benchmarks for all years combined and all lines of business combined are now included.

3. Benchmark severity patterns (cvbSevPatterns)

For the 6 severity ratio arrays, calendar year 2019 was added. In addition, new benchmarks for all years combined and all lines of business combined are now included.

4. Benchmark correlation between LOBs (cvbCorrelation)

For all correlation benchmarks, new benchmarks for calendar year 2019 were added and all years combined were updated to include 2019 data.

5. Support functions

The following support functions were updated to include 2019:

CalYrCode → cvbCalYrAbbr calYrName cvbCalYrCode

What's different in the free version?

The free version differs from the full version in the following respects:

- cvbLDFPatterns – excludes all years combined, calendar years 2015-2019, and the patterns for the cvbUnpaid and cvbMackUnpaid functions.
- cvbFreqPatterns – excludes all years combined and calendar years 2015-2019.
- cvbSevPatterns – excludes all years combined and calendar years 2015-2019.
- cvbUnpaid – inactive.
- cvbMackUnpaid – inactive.
- cvbCorrelation -- excludes all years combined and calendar years 2015-2019.
- The cvbMackCalc and cvbMerzWuthrichCalc functions, as well as most of the support functions, are fully active.

2. Installing the Claim Variability Benchmarks

STEP 1: DOWNLOAD INSTALLATION FILE

Thank you for licensing the Milliman Claim Variability Benchmarks™.

- After the license has been processed, you will receive instructions for where to download the software.
- Click on **Download 2.1** to download the installation file to your computer.

Latest releases

Arius **Claim Variability Benchmarks** ReservePro TriangleMaker Affinity Professional

Notes:

- This software will install and run only after you have accepted the Milliman License Agreement.
- You may need administrator privileges on your computer in order to install Claim Variability Benchmarks.
- A limited version is available at no charge during the installation process.

[CVB FAQs →](#)

Current release: CVB 2.1, November 2021
Prerequisites: None. This release is a complete system.

[Download 2.1 ↓](#)

[Quick start guide ↓](#)

New feature highlights for CVB version 2.1

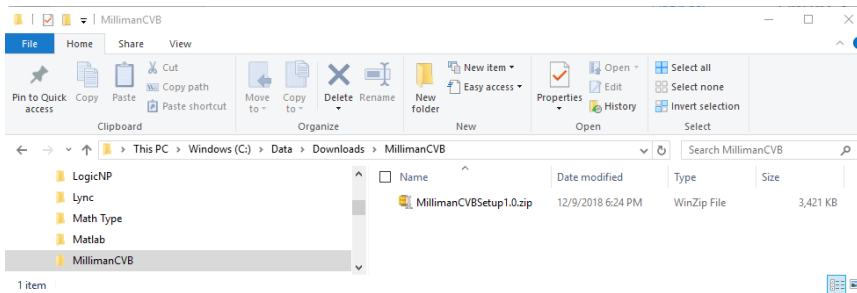
Benchmark loss development patterns (cvbLDFPatterns) – New benchmarks for calendar year 2019 were added and all years combined were updated to include 2019 data. In addition, new benchmarks for all lines of business combined are now included.

STEP 2: UNZIP FILES

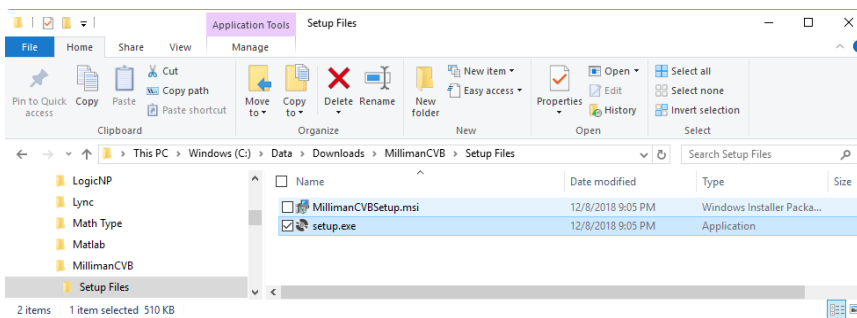
In the folder where you saved the installation file, unzip the files into a new folder.

(The folders and files shown are only examples, you can use any folder names you choose.)

Downloaded file:

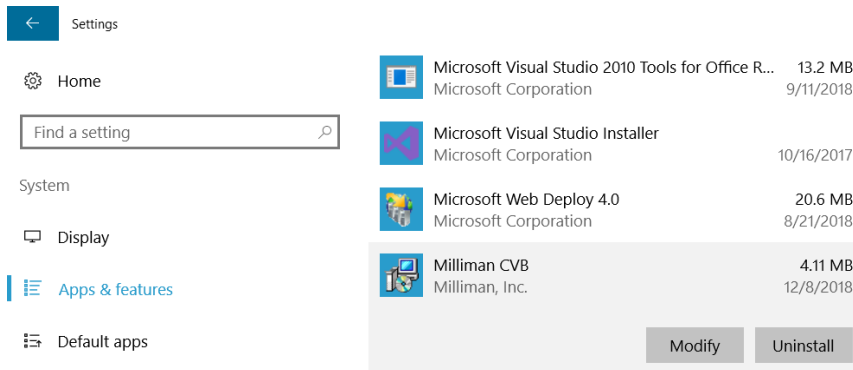


Files after unzipped



STEP 3: UNINSTALL PRIOR VERSION

- *If this is the first installation, you can skip this step.*
- Before installing, if you have installed an earlier version, **you must uninstall the prior version before installing the new version.**
- Use Windows Settings to find the prior installation.
 - Windows 10: Start | System | Applications and Features
 - Windows 7: Start | Control Panel | Programs and Features

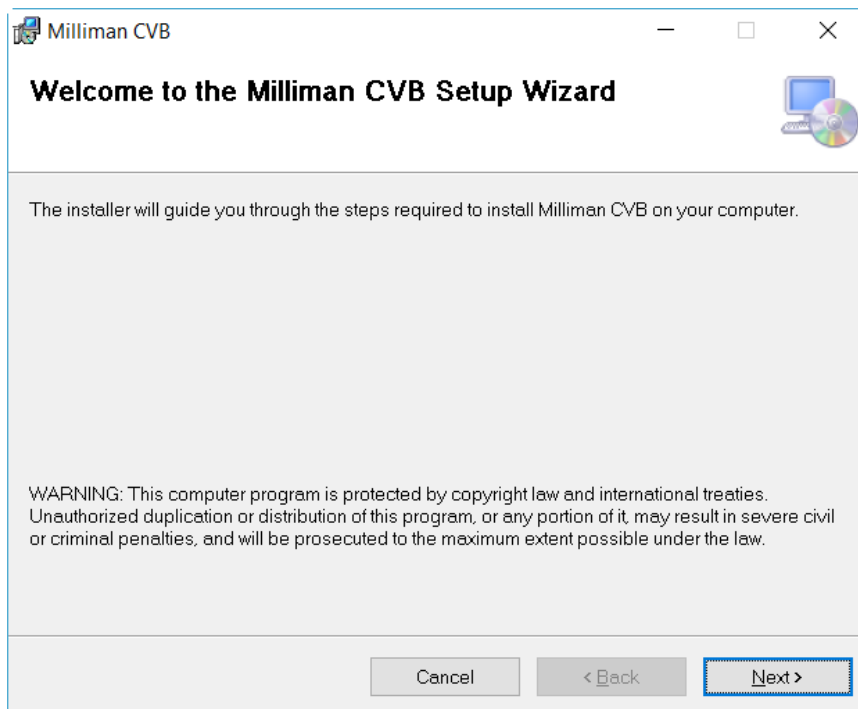


STEP 4: RUN SETUP.EXE TO INSTALL MILLIMAN CVB

Make sure Excel is closed prior to running the installation program.

You may need Administrator access to install Milliman CVB.

1. Double click on the **Setup.exe** file as shown in Step 2.
This will start the Setup Wizard.
2. Click **Next** and follow instructions for installing the Milliman CVB.



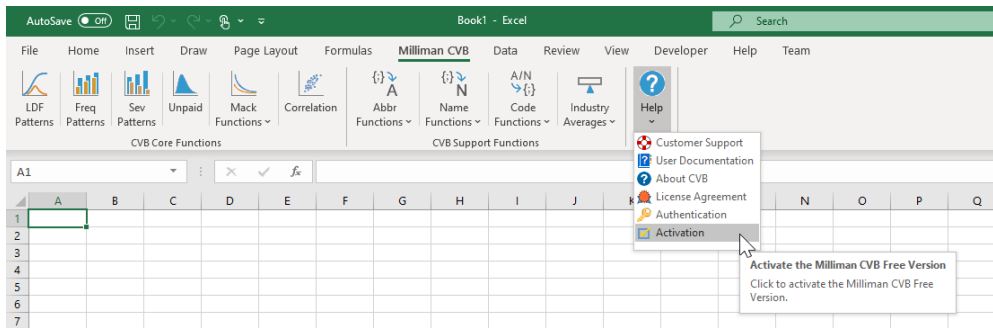
STEP 5A: OPEN EXCEL & ACTIVATE LICENSE (FREE VERSION)

If you are authenticating the full version, you can skip this step.

After the installation process is complete, you can open Excel and the Milliman CVB ribbon should appear after the Formulas ribbon.

1. Click on HELP | ACTIVATION to open the License Activation window.
2. Enter the required information for accepting the system license, click the checkbox to confirm you accept the license agreement, click the checkbox to confirm you will send the contact information email, and click the **Activate** button.
3. Your default email program will open with an email to actuarialsoftware@milliman.com. You only need to send the email without any changes.

Most of the Milliman CVB functions should now be fully or partially active (See Section 1 and the User Guide for details).



CVB License Activation

Milliman Claim Variability Benchmarks Licensee Information:

First Name:* Last Name:*

Company Name:*

Address 1:*

Address 2:

City:* State:* Postal Code:*

Country:*

Telephone:*

Email Address:*

* Required information.

License I have read and accept the CVB license agreement.
 I agree to send email with my contact information.

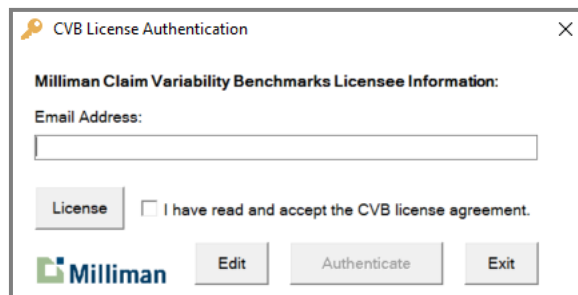
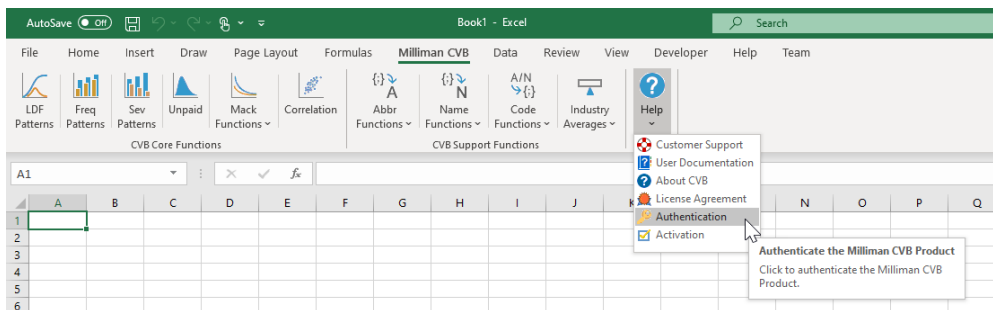
STEP 5B: OPEN EXCEL & AUTHENTICATE LICENSE

If you are activating the free version, you can skip this step.

After the installation process is complete, you can open Excel and the Milliman CVB ribbon should appear after the Formulas ribbon.

1. Click on HELP | AUTHENTICATION to open the License Authentication window.
2. Enter the email address you used when you licensed the system, click the checkbox to confirm that you accept the license agreement, and click the **Authenticate** button.

All the Milliman CVB functions should now be fully active.

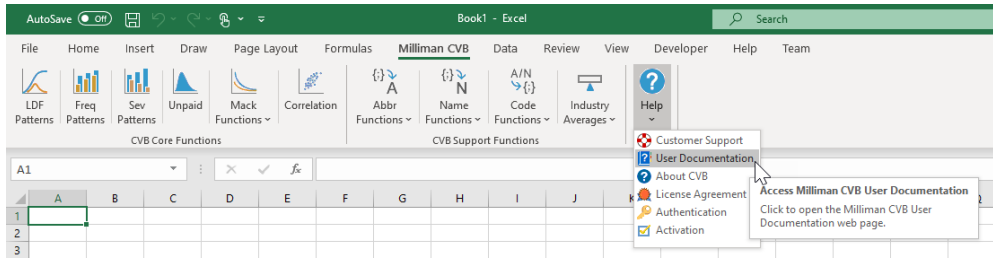


3. Getting Started with the Milliman CVB

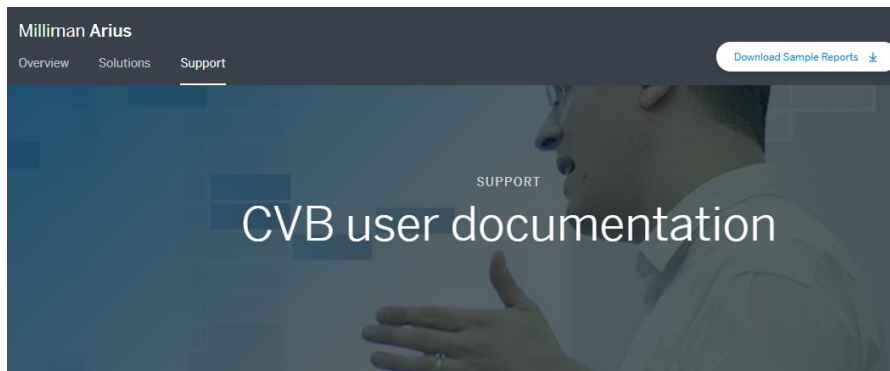
After the CVB has been installed and the license has been authenticated, the Milliman CVB ribbon and all the functions will always be available for use in Excel. Help in learning about the functions and how to use them are available through the Milliman CVB ribbon.

HELP FROM THE USER GUIDE

1. Click on HELP | USER DOCUMENTATION to access the Support files on the Milliman website.



2. From the Support webpage, click on **CVB user guide** to download a copy of the User Guide.



User documents

- [CVB user guide](#)
- [CVB user guide examples](#)
- [CVB analysis template](#)
- [CVB product placemat](#)

Articles & papers

- [A quantum leap in benchmarking P&C unpaid claims](#)
- [A quantum leap in benchmarking P&C reserve ranges](#)
- [A quantum leap in benchmarking P&C unpaid claim distributions](#)
- [A quantum leap in benchmarking P&C aggregate unpaid distributions](#)
- [A quantum leap in benchmarking P&C risk margins under Solvency II](#)
- [Back-testing the ODP Bootstrap & Mack Bootstrap models](#)
- [Cash flow and unpaid claim runoff estimates using Mack and Merz-Wüthrich Models](#)

3. The Claim Variability Benchmarks User Guide contains detailed information and examples for using every function.

USING THE SAMPLE FILES

1. From the Support webpage, click on **CVB user guide examples** to download an Excel file that contains all the examples used in the User Guide. (The Excel file is in a ZIP file when downloaded.)

cvbLDFPatterns Function Example:															
1	cvbLDFPatterns Function Example:														
2															
3	LOBCode:	1	<= Select LOBCode from 1 to 16.												Commercial Auto Liability
7	Results:	0.1984	0.4376	0.6457	0.8072	0.9067	0.9532	0.9735	0.9841	0.9894	0.9934				
10	cvbLDFPatterns Function Example:														
11															
12	LOBCode:	3	<= Select LOBCode from 1 to 16.												Homeowners & Farmowners
13	LDFDataCode:	1	<= Select LDFDataCode: 1 = Paid; 2 = Incurred; ...; 10 = Paid (Mack).												Paid Losses
14	StatsCode:	2	<= Select StatsCode: 1 = Wgtd Avg; 2 = Wgtd Std Dev; 3 = Avg; 4 = Std Dev.												Weighted Standard Deviation
15	CalYrCode:		<= Select CalYrCode: 1 = All Years; 2-31 = 1989-2018.												2018 Only
17		12	24	36	48	60	72	84	96	108	120				
18	Results:	5.30%	2.13%	1.30%	0.81%	0.62%	0.48%	0.38%	0.34%	0.28%	0.25%				

2. From the Support webpage, click on **CVB analysis template** to download an Excel file that has been designed to illustrate the analytical capabilities of all the functions. (The Excel file is in a ZIP file when downloaded.)

Milliman
Claim Variability Benchmarks
 User Inputs for Unpaid & LDF Benchmarks

Company Name: Segment Name:

Selected Line of Business: Line of Business:

Enter Year End: Use Variance Adjustments?

Select Rounding:

Select Currency:

Enter Company Data: Shift Selected Unpaid? Use Selected Development Pattern?

Input CA Values (000's)			
Year	Premium	L/R	Selected
2009	62,950	70.0%	
2010	51,335	80.0%	

CA Industry Averages (US\$ 000's)			
Year	Premium	L/R	
2009	19,719	73.8%	
2010	20,459	75.3%	

3. For the **CVB analysis template** file, you can easily unlock all the sheets from the INFO sheet.

4. Deactivating / Activating the CVB Product

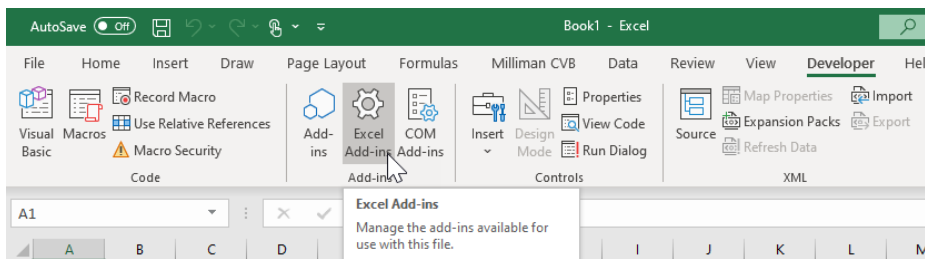
After installation and activation, the Milliman CVB ribbon and all functions will be active whenever you open Excel.

The CVB should not interfere with other Excel add-ins, but if you need to deactivate the product temporarily, you can follow the instructions below.

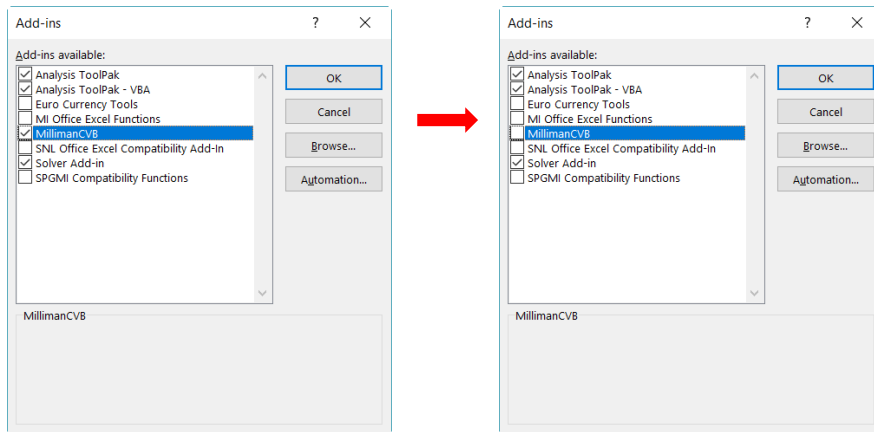
TEMPORARY DEACTIVATION – CVB FUNCTIONS

1. Click on the **Excel Add-ins** button on the **Developer** ribbon to open the Add-ins window.

(Another option is to use FILE | OPTIONS | ADD-INS, select Manage: EXCEL ADD-INS and click the Go button to open the Add-ins window.)



2. Click on the **Milliman CVB** checkbox to deactivate (uncheck) the Milliman CVB functions.

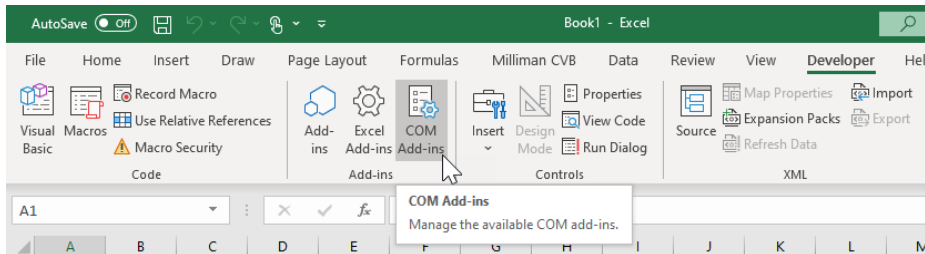


All the Milliman CVB functions will no longer be accessible or visible in the Functions list.

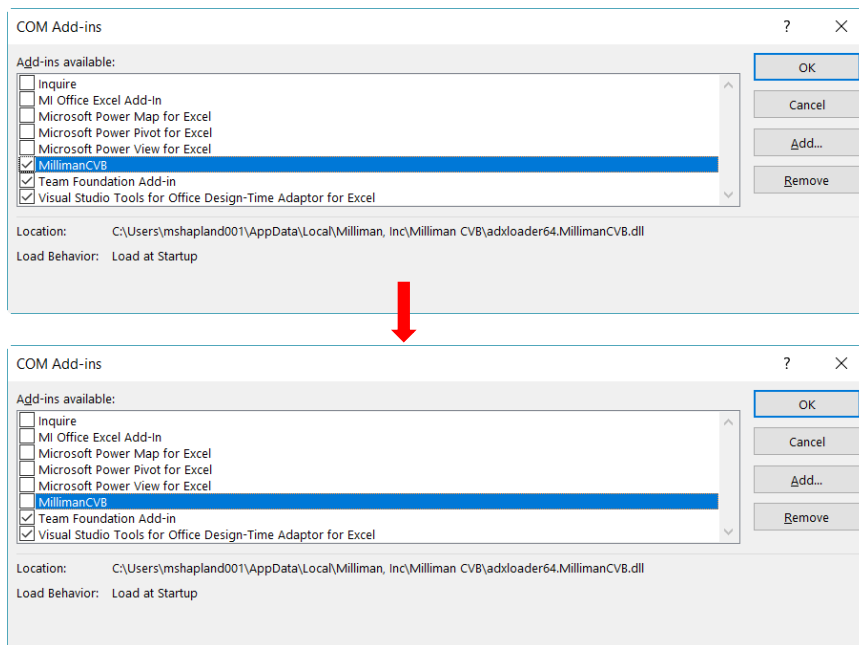
(See page 146 if the Developer ribbon is not visible.)

TEMPORARY DEACTIVATION – CVB RIBBON

1. Click on the **COM Add-ins** button on the **Developer** ribbon to open the COM Add-ins window.
(Another option is to use FILE | OPTIONS | ADD-INS, select Manage: COM ADD-INS and click the Go button to open the COM Add-ins window.)



2. Click on the **Milliman CVB** checkbox to deactivate (uncheck) the Milliman CVB ribbon.



The Milliman CVB ribbon will no longer be visible or accessible in Excel.

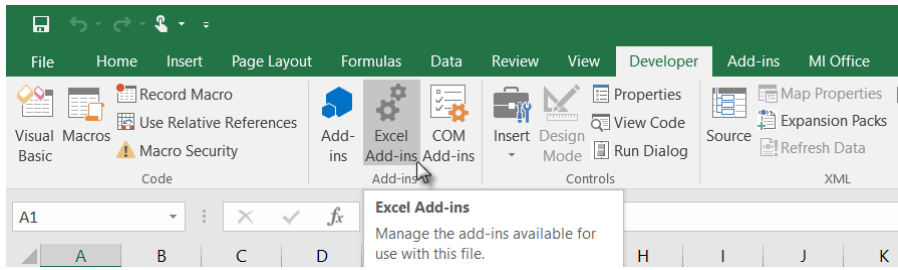
(See page 146 if the Developer ribbon is not visible.)

REACTIVATION – CVB FUNCTIONS

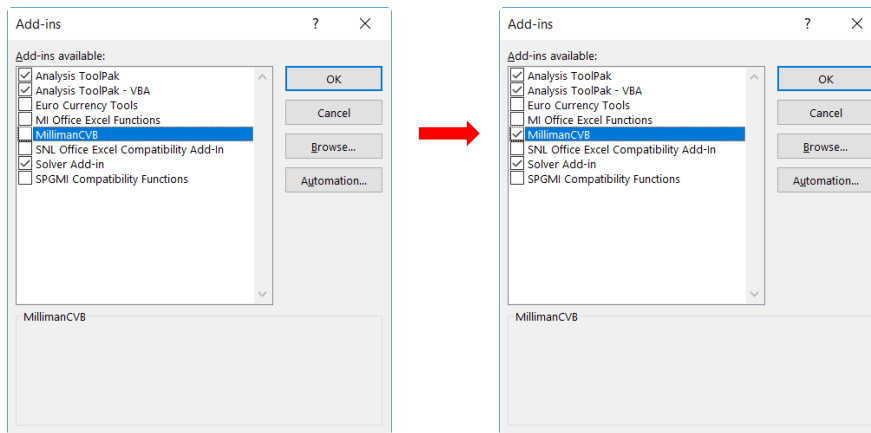
If the Milliman CVB ribbon and/or functions have been temporarily deactivated, you can follow the instructions below to reactivate the ribbon and/or functions.

1. Click on the **Excel Add-ins** button on the **Developer** ribbon to open the Add-ins window.

(Another option is to use FILE | OPTIONS | ADD-INS, select Manage: EXCEL ADD-INS and click the Go button to open the Add-ins window.)



2. Click on the **Milliman CVB** checkbox to activate (check) the Milliman CVB functions.

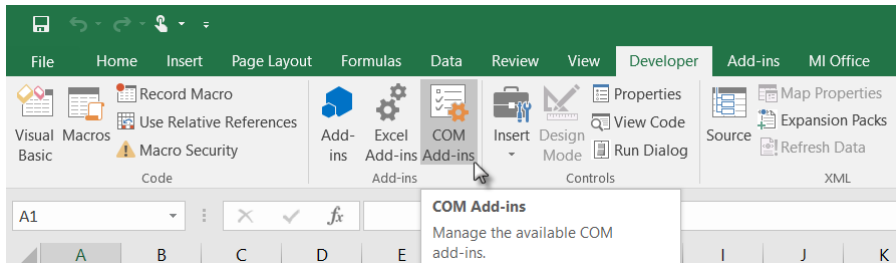


All the Milliman CVB functions will again be accessible and visible in the Functions list.

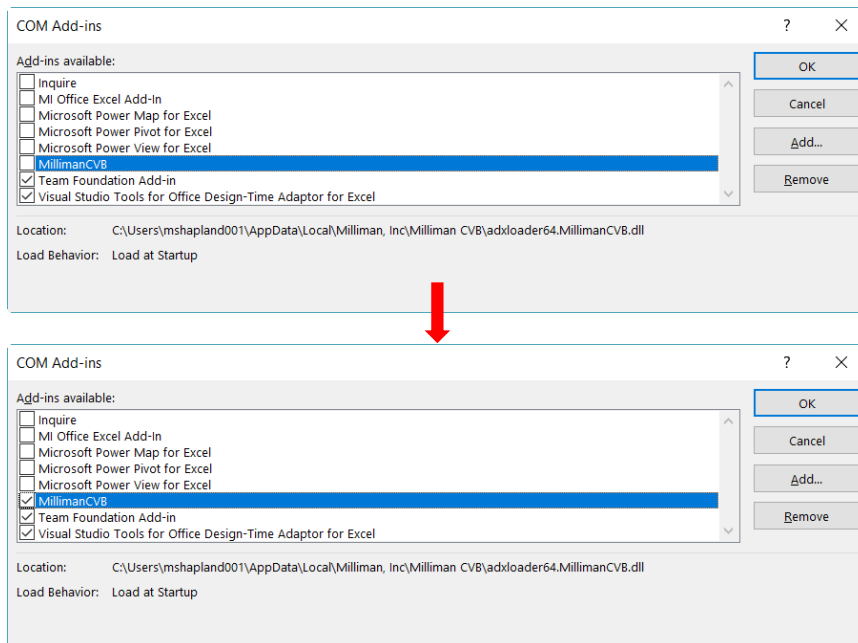
(See page 14 if the Developer ribbon is not visible.)

REACTIVATION – CVB RIBBON

1. Click on the **COM Add-ins** button on the **Developer** ribbon to open the COM Add-ins window.
(Another option is to use FILE | OPTIONS | ADD-INS, select Manage: COM ADD-INS and click the Go button to open the COM Add-ins window.)



2. Click on the **Milliman CVB** checkbox to activate (check) the Milliman CVB ribbon.



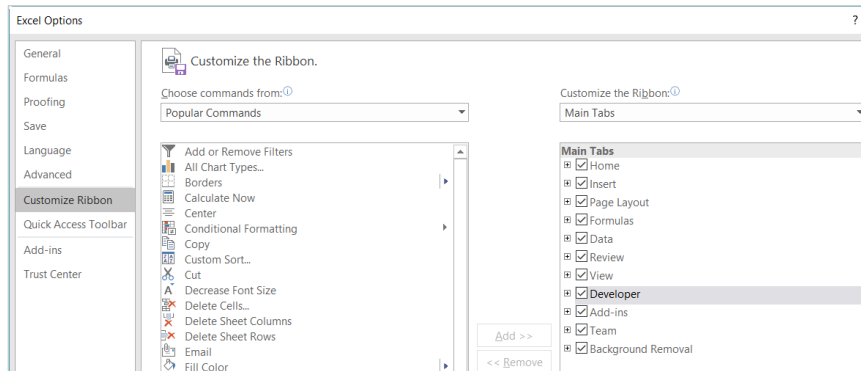
The Milliman CVB ribbon will be visible and accessible in Excel.

(See page 146 if the Developer ribbon is not visible.)

ACTIVATE EXCEL DEVELOPER RIBBON

If the Developer ribbon is not visible in Excel, follow the instructions below.

1. Click on FILE | OPTIONS to open the Excel Options window.



2. In the Excel Options window, select the **Customize Ribbon** option and then check the **Developer** checkbox.
3. Select **OK**.

The Developer ribbon will now be visible in Excel.