FINCAD® Analytics Suite 2009 Release Notes

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1. Introduction

The primary purpose of the release notes are to provide information on *changes* that have been made to FINCAD Analytics Suite 2009 maintenance release (February 2009) compared to the FINCAD Analytics Suite 2009 (November 2008).

Also included within the document are known issues with workarounds, workbook specific changes that will affect Analytics Suite for Excel and a section on issues affecting only Analytics Suite for Developers.

2. Analytics

The analytics section includes new analytics features added in the maintenance release as well as highlights changes that were made to existing functions based on issues that were found. Unless otherwise specified, the update to the function does not require a user to make any changes to their application or spreadsheet. The value may change when a recalculation is done. The changes listed here will affect FINCAD Analytics Suite for Excel and FINCAD Analytics Suite for Developers.

2.1 New Analytics Features

Altiplano Full Risk	A function was added that provides the user with all first order risk for the inputs used in pricing an Altiplano option.
Brazilian FRN	An additional interest payment type was added to the aaFRN_BRL* functions. This new method is based on ratio of principal payment over total principal remaining.
Snowrange	Functionality was added for a snowrange which is essentially a structured product where the current coupon depends on the previous coupon subject to the current coupon staying within a pre-specified range.
Trigger Swap	Allows for the pricing of a swap (vanilla or amortizing) where the current coupon can be knocked out if the floating rate reaches a barrier (pre-specified level). A cash flow function is also provided.

2.2 Fixed Income

aaFRN*	The FRN functions were returning a large convexity when no change of principal was specified. This has been fixed.

2.3 Interest Rate

aaCallCMSSprdRangeAcc_LMM_fs (IR)	In cases where there was only one exercise date, the put option value would be negative. Since the value should be positive, the bug causing this negative value was fixed.

*Note: * means that the note and the fix applies to all numbered versions of the function. For example, aaSwap* = aaSwap, aaSwap2, aaSwap3, etc.

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2.4 Equity, FX & Commodities

aaBSG_delta_smile_iv	The math reference was updated to include information on convergence condition that is used.

2.5 Utilities

aaCorr_mat_h	In rare cases, due to bad inputs, the function would cause Microsoft Excel to #VALUE or crash. Internally this was due to a function call to aaEigen. This issue has been fixed.
aaDateCount	During performance testing, the speed with the function aaDateCount was found to be too slow. The performance issue was fixed and tested by running an example with a long holiday list parameter (2223 holiday entries). Test : v2009 = over 450ms; v2009.1 = 35ms.
aaAccrual_factor2	The function aaAccrual_Factor2 was not calculating the accrual correctly for act/365L. This has been fixed.
aaAccrual_factor2	Testing revealed that the function was slow in the v2009 release. The performance issue was fixed and tested by running an example with a long holiday list parameter (2223 holiday entries). (v2009 = over 300ms; v2009.1 = 35ms)

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3. Usability Changes

The following list of issues / changes are only specific to FINCAD Analytics Suite 2009 for Excel.

Credit Default Swaps - Alternative Modeling Approaches	In math doc "Credit Default Swaps - Alternative Modeling Approaches" a footnote was missing. The document was updated to include the following: The rebased discount factor curve is obtained by scaling the discount factor curve so that it starts (has a value of 1) on the value date.
PRDC notes	Spelling mistakes were corrected within the math references
Heston Volatility and Variance Swaps	In the Variance and Volatility Swaps functions (using Heston) math reference, under equation (18) the definition says they are the initial volatility and long term volatility. It should read initial variance and the long-term variance
FINCAD Option Models	A broken link within the FINCAD Option Models math reference was fixed.
Swaptions	A broken link within the Swaptions math reference was fixed.
Tranche Linked Notes	A broken link within the Tranche Linked Notes math reference was fixed.
Swap Portfolio Functions	The workbook examples for the Swap Portfolio functions were missing from the math reference. These have been added.
Brazilian FRN	The example within the math reference was not set-up correctly. The example has been updated.
CMS Caplets and Floorlets	The example within the CMS Caplets and Floorlets math reference was not set-up correctly. The example has been updated.
CMS Spread Range Accrual Note Example	The example within the math reference was not set-up correctly. The example has been updated.
PRDC Math reference	The example within the math reference was not set-up correctly. The example has been updated.
Treasury Lock Math Reference	The example within the math reference was not set-up correctly. The example has been updated.
Math Docs Missing in the Analytics Finder	Some math references were not displayed in the Analytics Finder. This has been updated.
Double Barrier Exotic Options Math Reference	Within the double barrier math reference, there was a link to a function that does not exist. This link was removed.
Spread option math reference	The spread options document contained reference to a formula that was incorrect. The correct payoff is {Max(S2-S1-K,0)} and the math reference has been updated.
Company / users with accented characters fail web activation with FINCAD licensing	The FINCAD licensing file had issues when accented characters were used in the user or company name. The FINCAD licensing service was updated.
Function Wizard	If a user had v11 and installed v2009, the Function Wizard would not launch in v11 if the user chose not to proceed with v2009. The reason was that files were being re-named that should not have been. This has been fixed.

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4. Workbooks

4.1 New Workbooks

A number of new workbooks were added to FINCAD Analytics Suite 2009 maintenance release (February 2009) for Excel which are not in FINCAD Analytics Suite 2009 (November 2008).

Asset-Backed CDS Load-Only CDS	Calculate the fair value, cash flows and risk factors of a loan-only or asset backed CDS.
Altiplano Option	Calculates, by Monte Carlo simulation, the fair value, the precision of the fair value and the risk statistics for an Altiplano option. Allows free-style sampling points
Swaption (European – SABR Model)	Calculate the fair value and risk statistics of a European swaption on a custom structured swap using the SABR model. Calibration worksheets enclosed.

4.2 Enhancements to Existing Workbooks

A number of enhancements were made to workbooks are included in the FINCAD Analytics Suite 2009 maintenance release (February 2009) for Excel which are not in FINCAD Analytics Suite 2009 (November 2008).

The following lists of improvement are only specific to FINCAD Analytics Suite 2009 for Excel

Calibration – Auto (BK & HW – using Swaptions) (BLP(R))	Calculate the rate volatility and mean reversion constant for the Hull-White or Black-Karasinski model given swaption data. Allows for automatic (Bermudan style) and manual selection of swaptions. Uses Bloomberg data feed for curve and swaption rates.
Calibration – Auto (BK & HW – using Swaptions) (FMD)	Calculate the rate volatility and mean reversion constant for the Hull-White or Black-Karasinski model given swaption data. Allows for automatic (Bermudan style) and manual selection of swaptions. Retrieves interest rate curve, holiday list and swaption volatilities from FINCAD Market Data.
CapFloor Interest Rate Volatility (FMD)	Added a matrix to better display the data and make it easier for the user to integrate the data with other FINCAD functions.
Swaption Interest Rate Volatility (FMD)	Added a matrix to better display the data and make it easier for the user to integrate the data with other FINCAD functions.

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4.3 *Other Workbooks Issues*

The following list of issues / changes are only specific to FINCAD Analytics Suite 2009 for Excel

Auto_open	The auto_open code within the workbooks was failing on some machines. This has been fixed.
User settings for workbooks	An issue was detected in rare cases when using FINCAD workbooks. In case an error is encountered it might require the following change. The Error Trapping level in VBA should set to "Break on Unhandled Errors". Setting the error trapping level to "Break on All Errors" will result the code to add curve worksheets to fail.
Microsoft Excel crash when launching the same workbook twice	In rare cases, opening up the bond workbooks multiple times caused Excel to crash. This issue was fixed by making an installer change
Muni Swap (Vanilla or Amortizing)	A formula for determining reset status in the reset table was missing the OFFSET function. This has been added.
Compounding Swap	The workbook would #VALUE when a swap is in its last coupon period (payment frequency = reset frequency). This has been fixed by adding an IF statement before aaColumneCombine and removed aaDisplayArray in ROWS function.
FMD Swap curve formula error with Italian Excel	The data being downloaded from via the FINCAD Market Data connector was formatted for US. This caused problems for jurisdictions where a comma is used versus the period to separate information. This issue has been resolved.
Bond Portfolio (BLP)	The workbook was not downloading historical data. It was updated to use the appropriate function to download the data.
"Vanilla Interest Rate Swap"	The Vanilla Interest Rate Swap workbook (FMD) was removed. The workbook is now available by selecting FINCAD Market Data from the Curve Settings selection and then accessing the workbooks from the Swaps section.

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5. Known Issues with Workarounds

aaCE_SwapPort_dgen*	The function will #VALUE when a measurement date is entered beyond the longest maturity date of the swap. The workaround is to ensure that the last measurement date does not go beyond the maturity date of the longest dated swap.
Opening a workbook for the first time	When you first open a workbook, auto calculation is set. In v2009, we introduced the ability to change the curve that is used to either be user data, FINCAD Market Data or Bloomberg. Since a workbook is stored without any curve and initially automatic calculation is on, the workbook calculates but #VALUE's. Subsequent openings of workbooks will not calc as we force a change to manual.
dll names	In some cases, the dll name may appear as FINCAD_tkf3_xx_1.dll. It should read: FINCAD_tkf3_xx_2.dll
FMD Login menu is still disabled after timed-out session	User must refresh the curve and login from the prompt window
FINCAD license file not removed on uninstall	To manually remove from command line, run: sc delete lmservice2 and then delete the folder
Co-existence of two Analytics Suite versions	If a user has both FINCAD Analytics Suite 2009 for Excel and for Developers, both version numbers need to be the same. If a user upgrades one, the Analytics Finder may stop working in the older version. A workaround to this issue other than upgrading both products to the same version are: • Copy the *localization.xml* from *Program Files\FINCAD\Suite 2009 for Excel\Spec* from the upgraded version to the same directory in the prior version
FINCAD Market Data Connector (FMDC)	There is an issue with the FMDC when a user installs the latest version to replace v11. If the user would like to revert back to v11, please contact Client Services for assistance in getting the FMDC working.

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6. FINCAD Analytics Suite for Developers

The following lists of issues are only specific to Analytics Suite 2009 for Developers.

"Show Example" button	The Show Example button was updated to default to the user's last action.
Analytics Finder	The Function Reference now updates and includes details based on the user selected programming language.
aaFRN2_fs	The function aaFRN2_fs failed to calculate (protected memory error) in VB.Net and C#. This issue has been fixed.
DEMOEXE.vbp (running sample app in VB6/COM	The Demoexe.vbp sample application would not run properly in FINCAD Analytics Suite 2009 for Developer in VB6 and COM. This is now fixed.

7. FINCAD Market Data

The following list of changes or improvements which are only specific to FINCAD Market data.

Usability	Added Proxy Connection Fix to allow Default Credentials for networks with Proxy Servers.
Usability	Added "(FMD)" to the name of all workbooks to make them more easily identifiable and for searching functionality.
Usability	Improved formatting when data is downloaded from the FINCAD Market Data Server
Usability	Added extra error handling support to help trap connection issues. Will now return the WebException and HttpException descriptions when an error occurs allowing FINCAD to help trap the error more quickly.
Workbook	Added Min Years support to Interest Rate Curve Worksheet. This optional field will allow the curves to be extended to a minimum number of years.
Workbook	Delete Vanilla Swap workbook. No longer needed as FMDC is integrated with all other workbooks.
Workbook	An automated calibration workbook has been added. The workbook will download the appropriate data from FINCAD Market Data and automatically calibrate based on the instrument details.
Workbook	A worksheet was added to "Swaption Interest Rate Volatility(FMD).xlt" to auto-transform downloaded data into a matrix
Workbook	A worksheet was added to "CapFloor Interest Rate Volatility(FMD).xlt" to auto-transform downloaded data into a matrix

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