

Financial Toolbox™

Release Notes

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Summary by Version

This table provides quick access to what's new in each version. For clarification, see “Using Release Notes” on page 1.

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Latest Version V3.4 (R2008a)	Yes Details	No	Bug Reports	Printable Release Notes: PDF Current product documentation
V3.3 (R2007b)	Yes Details	No	Bug Reports	No
V3.2 (R2007a)	Yes Details	No	Bug Reports Includes fixes	No
V3.1 (R2006b)	Yes Details	No	Bug Reports	No
V3.0 (R2006a)	Yes Details	No	Bug Reports	No
V2.5 (R14SP3)	Yes Details	No	Bug Reports	No

Using Release Notes

Use release notes when upgrading to a newer version to learn about:

- New features
- Changes
- Potential impact on your existing files and practices

Review the release notes for other MathWorks™ products required for this product (for example, MATLAB® or Simulink®) for enhancements, bugs, and compatibility considerations that also might impact you.

If you are upgrading from a software version other than the most recent one, review the release notes for all interim versions, not just for the version you are installing. For example, when upgrading from V1.0 to V1.2, review the release notes for V1.1 and V1.2.

What's in the Release Notes

New Features and Changes

- New functionality
- Changes to existing functionality

Version Compatibility Considerations

When a new feature or change introduces a reported incompatibility between versions, the **Compatibility Considerations** subsection explains the impact.

Compatibility issues reported after the product is released appear under Bug Reports at the MathWorks Web site. Bug fixes can sometimes result in incompatibilities, so you should also review the fixed bugs in Bug Reports for any compatibility impact.

Fixed Bugs and Known Problems

The MathWorks offers a user-searchable Bug Reports database so you can view Bug Reports. The development team updates this database at release time and as more information becomes available. This includes provisions for any known workarounds or file replacements. Information is available for bugs existing in or fixed in Release 14SP2 or later. Information is not available for all bugs in earlier releases.

Access Bug Reports using your MathWorks Account.

Version 3.4 (R2008a) Financial Toolbox™ Software

This table summarizes new features in Version 3.4 (R2008a).

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports	Printable Release Notes: PDF Current product documentation

New features and changes introduced in this version are:

- “Enhanced Mean-Variance Portfolio Optimization Based on Linear Complementarity Programming for Portfolio Optimization” on page 3
- “Support for Actual/365 (ISDA)” on page 3
- “Support for ret2tick and tick2ret Functions for Time Series Objects” on page 5
- “Support for Additional Descriptive Statistics Functions Financial Times Series Objects” on page 5
- “Added New Chart Types” on page 6

Enhanced Mean-Variance Portfolio Optimization Based on Linear Complementarity Programming for Portfolio Optimization

Added support for varargin argument for portopt and frontcon.

Support for Actual/365 (ISDA)

The following functions now support day count conventions for the basis argument based on ISDA (International Swap Dealers Association) actual/365:

- accfrac
- acrubond

- `acrudisc`
- `bndconvp`
- `bndconvy`
- `bnddurp`
- `bnddury`
- `bndprice`
- `bndspread`
- `bndyield`
- `cfamounts`
- `cfdates`
- `cftimes`
- `cpncount`
- `cpndaten`
- `cpndateng`
- `cpndatep`
- `cpndatepq`
- `cpndaysn`
- `cpnpersz`
- `datemnth`
- `daysadd`
- `daysdif`
- `disc2zero`
- `discrate`
- `fvdisc`
- `fwd2zero`
- `prbyzero`
- `prdisc`

- prmat
- pyld2zero
- time2date
- yeardays
- yearfrac
- ylddisc
- yldmat
- zbtprice
- zbtyield
- zero2disc
- zero2fwd
- zero2pyld

Support for ret2tick and tick2ret Functions for Time Series Objects

ret2tick and tick2ret support financial time series objects.

Support for Additional Descriptive Statistics Functions Financial Times Series Objects

The following covariance methods now support a financial time series object:

- corrcoef
- cov
- isempty
- nancov
- nanmax
- nanmedian
- nanmin
- nanstd

- nansum
- nanvar
- var

Added New Chart Types

Added support for the following chart types for financial reporting:

- kagi
- renko
- linebreak
- priceandvol
- volarea

Version 3.3 (R2007b) Financial Toolbox™ Software

This table summarizes new features in Version 3.3 (R2007b).

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports	No

New features and changes introduced in this version are:

- “ISMA Support for 30/360 Basis as a Variant of 30/360E with Annual Compounding” on page 7
- “createholidays Function Added for Different Trading Calendars” on page 9
- “Diagonal Covariance Matrix Support Added for Multivariate Normal Regression” on page 9
- “arith2geom and geom2arith Functions Added for Portfolio Analysis” on page 10

ISMA Support for 30/360 Basis as a Variant of 30/360E with Annual Compounding

The following functions now support day count conventions for the basis argument to support 30/360 International Securities Market Association (ISMA) convention as a variant of 30/360E with annual compounding:

- `accfrac`
- `acrubond`
- `acrudisc`
- `bndconvp`
- `bndconvy`
- `bnddurp`
- `bnddury`

- `bndprice`
- `bndspread`
- `bndyield`
- `cfamounts`
- `cfdates`
- `cftimes`
- `cpncount`
- `cpndaten`
- `cpndateng`
- `cpndatep`
- `cpndatepq`
- `cpndaysn`
- `cpnpersz`
- `datemnth`
- `daysadd`
- `daysdif`
- `disc2zero`
- `discrate`
- `fvdisc`
- `fwd2zero`
- `prbyzero`
- `prdisc`
- `prmat`
- `pyld2zero`
- `time2date`
- `yeardays`
- `yearfrac`

- `ylddisc`
- `yldmat`
- `zbtprice`
- `zbtyield`
- `zero2disc`
- `zero2fwd`
- `zero2pyld`

createholidays Function Added for Different Trading Calendars

The `createholidays` function now supports <http://www.FinancialCalendar.com> trading calendars. This function can be used from the command line or from the Trading Calendars graphical user interface. Using `createholidays`, you can create holiday.m files, in conjunction with `FinancialCalendar.com` data, that can be used instead of the standard `holidays.m` that ships with Financial Toolbox™ software.

Diagonal Covariance Matrix Support Added for Multivariate Normal Regression

The new diagonal covariance matrix estimation feature makes it possible to estimate large-scale factor models by treating the residual errors as being jointly independent. The following functions support `CovarFormat`, a new input argument:

- `ecmlsrml`
- `ecmmvnrml`
- `ecmmvnrfish`
- `ecmmvnrobj`
- `ecmmvnrstd`
- `mvnrfish`
- `mvnrml`

- mvnrobj
- mvnrstd

arith2geom and geom2arith Functions Added for Portfolio Analysis

Two new functions, arith2geom and geom2arith, support portfolio analysis.

Version 3.2 (R2007a) Financial Toolbox™ Software

This table summarizes new features in Version 3.2 (R2007a).

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports Includes fixes	No

ISMA Support Added

The following functions now support the International Securities Market Association (ISMA) convention for the basis argument:

- `accfrac`
- `acubond`
- `acudisc`
- `bndconvp`
- `bndconvy`
- `bnddurp`
- `bnddury`
- `bndprice`
- `bndspread`
- `bndyield`
- `cfamounts`
- `cfdates`
- `cftimes`
- `cpncount`
- `cpndaten`
- `cpndatenq`

- cpndatep
- cpndatepq
- cpndaysn
- cpnpersz
- datemnth
- daysadd
- daysdif
- disc2zero
- discrete
- fvdisc
- fwd2zero
- prbyzero
- prdisc
- prmat
- pyld2zero
- time2date
- yeardays
- yearfrac
- ylddisc
- yldmat
- zbtprice
- zbtyield
- zero2disc
- zero2fwd
- zero2pyld

Version 3.1 (R2006b) Financial Toolbox™ Software

This table summarizes new features in Version 3.1 (R2006b).

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports	No

New features and changes introduced in this version are:

- “Investment Performance Metrics” on page 13
- “Financial Time Series Tool” on page 13

Investment Performance Metrics

The following new functions are added to compute common investment performance and risk-adjusted metrics:

- `sharpe`, computes the sharpe ratio.
- `inforatio`, computes information ratio and tracking error.
- `portalpha`, computes risk-adjusted alpha and return.
- `lpm`, computes sample lower partial moments.
- `elpm`, computes expected lower partial moments.
- `maxdrawdown`, computes the drop from maximum to minimum return over a period of time.
- `emaxdrawdown`, computes the returns that are transformed into a linear Brownian motion with drift.

Financial Time Series Tool

Financial Time Series Tool (`ftstool`) is a new graphical user interface to support working with financial time series FINTS objects. `ftstool` interoperates with the Financial Time Series Graphical User Interface (`ftsgui`) and Interactive Charts (`chartfts`).

Version 3.0 (R2006a) Financial Toolbox™ Software

This table summarizes new features in Version 3.0 (R2006a).

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports	No

New features and changes introduced in this version are:

- “Financial Time Series Toolbox Incorporated” on page 14
- “Financial Time Series Frequency Conversion Functions Modified” on page 14
- “Continuous Compounding Option Removed from `plyd2zero`” on page 15
- “New Statistical Functions” on page 15

Financial Time Series Toolbox Incorporated

As of this release the functionality previously available in Financial Time Series Toolbox has been incorporated into Financial Toolbox™ software. Financial Toolbox documentation has been modified to include the documentation previously available in the Financial Time Series User’s Guide.

Because use of Financial Time Series Toolbox required the purchase and installation of Financial Toolbox software, all customers previously licensed for Financial Time Series Toolbox will continue to have access to it.

Financial Time Series Frequency Conversion Functions Modified

The suite of time series frequency conversion functions (`todayly`, `toweekly`, `tomonthly`, `tosemi`, and `toannual`) has been extensively modified. Consult the function references in the Financial Toolbox User’s Guide for specifics.

Continuous Compounding Option Removed from `plyd2zero`

Continuous compounding is no longer available for `plyd2zero`. Compounding for this function is now consistent with compounding for the function `zero2plyd`. An error message is generated if you attempt to use continuous compounding with these functions.

New Statistical Functions

The new functions in Version 3.0 of Financial Toolbox software fall into these four categories:

- “Multivariate Normal Regression Without Missing Data” on page 15
- “Multivariate Normal Regression With Missing Data (Expectation Conditional Maximization)” on page 16
- “Least Squares Regression With Missing Data (Expectation Conditional Maximization)” on page 16
- “Financial Model Transformation Function” on page 16

Multivariate Normal Regression Without Missing Data

<code>mvnrfish</code>	Fisher information matrix for multivariate normal or least-squares regression
<code>mvnrmlc</code>	Multivariate normal regression (ignore missing data)
<code>mvnrobj</code>	Log-likelihood function for multivariate normal regression without missing data
<code>mvnrstd</code>	Evaluate standard errors for multivariate normal regression model

Multivariate Normal Regression With Missing Data (Expectation Conditional Maximization)

<code>ecmmvnrfish</code>	Fisher information matrix for multivariate normal regression model
<code>ecmmvnrmlc</code>	Multivariate normal regression with missing data
<code>ecmmvnrobj</code>	Log-likelihood function for multivariate normal regression with missing data
<code>ecmmvnrstd</code>	Evaluate standard errors for multivariate normal regression model

Least Squares Regression With Missing Data (Expectation Conditional Maximization)

<code>ecmlsrmlc</code>	Least-squares regression with missing data
<code>ecmlsrobj</code>	Log-likelihood function for least-squares regression with missing data

Financial Model Transformation Function

<code>convert2sur</code>	Convert a multivariate normal regression model into a seemingly unrelated regression model
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Version 2.5 (R14SP3) Financial Toolbox™ Software

This table summarizes what's new in Version 2.5 (R14SP3).

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports	No

New Statistical Functions

Version 2.5 introduces a set of financial statistical computation routines that compute values, such as mean and covariance, when there are missing data elements within a larger data set. These routines implement the Expectation Conditional Maximization (ECM) algorithm with various options that depend on the percentage of missing at random (MAR) data within the data set. The table below lists the functions that implement the ECM algorithm in Financial Toolbox™ software.

The following ECM functions have been added at this release.

Expectation Conditional Maximization

<code>ecmfish</code>	Fisher information matrix
<code>ecmhess</code>	Hessian of negative log-likelihood function
<code>ecmunit</code>	Initial mean and covariance
<code>ecmnml</code>	Mean and covariance of incomplete multivariate normal data
<code>ecmobj</code>	Negative log-likelihood function
<code>ecmstd</code>	Standard errors for mean and covariance of incomplete data

Compatibility Summary for Financial Toolbox™ Software

This table summarizes new features and changes that might cause incompatibilities when you upgrade from an earlier version, or when you use files on multiple versions. Details are provided with the description of the new feature or change.

Version (Release)	New Features and Changes with Version Compatibility Impact
Latest Version V3.4 (R2008a)	None
V3.3 (R2007b)	None
V3.2 (R2007a)	None
V3.1 (R2006b)	None
V3.0 (R2006a)	None
V2.5 (R14SP3)	None