

UnRisk

Release Notes Version 7.0 (June 2013)

1. Introduction

This document gives an overview of the changes in UnRisk from Version 6.0 to Version 7.0

See the following sections for a detailed overview.

For installing the software (new installation or update from an older version), follow the steps in the installation instructions.

2. New Inflation Linked Instruments

2.1. Inflation Zero Coupon Swap

In version 7.0 of UnRisk we introduce the new instrument type “Inflation Zero Coupon Swap”. The valuation of instruments of this type is performed under a Hull & White 1 factor model in combination with a 1 factor inflation model.

2.2. Inflation Year-on-Year Swap

In version 7.0 of UnRisk we introduce the new instrument type “Inflation Year-on-Year Swap”. The valuation of instruments of this type is performed under a Hull & White 1 factor model in combination with two 1 factor inflation models.

3. New Credit Linked Instruments

3.1 Collateralized Debt Obligation (CDO)

In version 7.0 of UnRisk we introduce the new instrument type “Collateralized Debt Obligation (CDO)”. The valuation of instruments of this type is performed under an interest rate curve and a list of underlying CDS curves for the calculation of default probabilities.

3.2. Basket Credit Linked Note (Basket CLN)

In version 7.0 of UnRisk we introduce the new instrument type “Basket Credit Linked Note (Basket CLN)”. The valuation of instruments of this type is performed under an interest rate curve and a list of underlying CDS curves for the calculation of default probabilities.

3.3. N-th To Default Note

In version 7.0 of UnRisk we introduce the new instrument type “N-th To Default Note”. The valuation of instruments of this type is performed under an interest rate curve and a list of underlying CDS curves for the calculation of default probabilities.

3.4. N-th To Default Swap

In version 7.0 of UnRisk we introduce the new instrument type “N-th To Default Swap”. The valuation of instruments of this type is performed under an interest rate curve and a list of underlying CDS curves for the calculation of default probabilities.

4. New Interest Rate Model Features

4.1. Hull & White 2 Model Calibration only according to Swaption Data

In version 7.0 of UnRisk we introduce the possibility to calibrate a Hull & White 2 factor model according to swaption data only (until now also cap data was needed).

4.2. Interest Rate Model Calibration according to Cap Prices

In version 7.0 of UnRisk we introduce the possibility to calibrate all interest rate models (generalized Hull & White model, Hull & White 2D model, Black Karasinski model, LIBOR market model) according to cap prices (until now only the calibration according to cap volatilities was possible).

4.3. Interest Rate Model Calibration according to Swaption Prices

In version 7.0 of UnRisk we introduce the possibility to calibrate all interest rate models (generalized Hull & White model, Hull & White 2D model, Black Karasinski model, LIBOR market model) according to swaption prices (until now only the calibration according to swaption volatilities was possible).

4.4. Re Factoring of the LIBOR Market Model Calibration

In version 7.0 of UnRisk we have re factored the optimization methods inside the calibration routine of the LIBOR market model.

5. New Instrument Features

5.1. Forward Starting Inflation Linked Floater

In version 7.0 of UnRisk we introduce the possibility to define inflation linked floater starting in the future (until now the start date had to be before the valuation date).

5.2. Expected Coupon Rates of Inflation Products

In version 7.0 of UnRisk we introduce the possibility to calculate the expected coupon rates of the following inflation linked instruments: inflation linked floater, inflation spread and inflation linked digital bond.

6. Multi-Curve Valuation of Bonds

In version 7.0 we introduce the possibility to value the following instrument types (bonds) by taking into account a forward (used for the calculation of the LIBOR rates) AND a discount curve (used for discounting):

- 6.1. Vanilla Cap / Floor**
- 6.2. Callable / Putable General Constant Maturity Floater**
- 6.3. Callable / Putable General Constant Maturity Floater Type 2**
- 6.4. Callable / Putable General Steepener**
- 6.5. Callable / Putable General Steepener Type 2**
- 6.6. Callable / Putable General Steepener Type 2 with Lock-In Feature**
- 6.7. Callable / Putable General Steepener Type 3**
- 6.8. Callable / Putable Min / Max Steepener**
- 6.9. Target Redemption Steepener**
- 6.10. Target Redemption Note**
- 6.11. Callable / Putable Snowball Floater**
- 6.12. Callable / Putable Ratchet Floater**
- 6.13. Callable / Putable Snowball Steepener**
- 6.14. Target Redemption Snowball**
- 6.15. Callable / Putable Digital Range Accrual**
- 6.16. Callable / Putable Digital Spread Range Accrual**

6.17. Callable / Puttable Dual Digital Spread Range Accrual

6.18. Callable / Puttable Spread Range Accrual

6.19. Target Redemption Digital Spread Range Accrual

6.20. Max / Min Volatility Bond

6.21. Callable / Puttable Volatility Bond

6.22. Average Rate Floater

6.23. Autocallable General Constant Maturity Floater

6.24. Autocallable General Steepener

6.25. Callable / Puttable General Zero

6.26. Callable / Puttable General Steepener Zero

6.27. Callable / Puttable Digital Range Accrual Zero

6.28. Auto / Chooser Cap / Floor