

VALUATION

Special Report

CONVERTIBLE BONDS, NOTES, CONVERTIBLE PREFERENCE SHARES

PREPARED BY:

Valtech Valuation

VALTECH HELPS IN

01

PRE- ISSUANCE VALUATION

Estimating the fair value of convertible notes, convertible bonds or convertible preference shares before issuance for planning

02

FAIR VALUE ACCOUNTING

Revaluing the convertible instruments for regular financial reporting periods

03

ACCOUNTING TREATMENT

Revaluing the convertible instruments on the dates of conversion exercised by holders

We have summarized some frequently asked issues in our professional practices. We hope these can help some market practitioners to have a better understanding on convertible instruments.



COMMON ISSUES

01

THE NAMES ARE SOMETIMES CONFUSING

We have seen an instrument called convertible bond while there is a condition that the convertible bond will not be redeemed at maturity and it will be mandatorily converted at maturity. Is it still a convertible bond? Don't worry, even though the names are sometimes confusing, all the valuation is performed according to the terms and conditions as stated in the financial instruments.

02

WHAT ARE THE MODELS TO VALUE CONVERTIBLE BONDS?

In finance, a lattice model is a technique applied to the valuation of derivatives, where a discrete time model is required. A lattice-based model is used to value derivatives, which are financial instruments that derive their price from an underlying asset such as a stock. A lattice model employs a binomial tree decision model to show the different paths the price of an underlying asset, such as a stock, might take over the derivative's life.

COMMON ISSUES

PATH DEPENDENT OPTIONS

A path dependent option is an exotic option that's value depends not only on the price of the underlying asset but the path that asset took during all or part of the life of the option. In this case, valuation of such option is not straightforward. It cannot be easily valued by typical lattice model or Black Scholes Option Pricing formula.

Real life path dependent example from the convertible bonds issued by HKEx listed company:



03

The Issuer may redeem all of the Convertible Bonds at the principal amount together with interest accrued but unpaid to, at any time after [a date] but prior to the Maturity Date, provided that the closing price of the shares of the Issuer for 20 out of 30 consecutive trading days was at least 130 per cent. of the Conversion Price.

In this case, lattice model cannot cater for the limitation on the redemption feature as the redemption feature is dependent on the closing price of the shares in the previous trading days. Monte Carlo simulation can be used instead.

COMMON ISSUES

EXERCISE PRICE RESET

It is common for convertible bonds to have adjustment clauses on conversion price or conversion ration to protect issuers and holders for shares consolidation, sub-division, distribution of share dividend etc. These terms are considered normal.

Some convertible bonds have a reset clause whereby the conversion ratio is adjusted upwards, or equivalently, the conversion price adjusted downwards if the underlying stock price does not exceed pre-specified trigger prices. This has the benefit of reviving those convertible bonds that are unlikely convertible because of poor stock price performance. This feature also helps issuers who want to promote conversion. With exercise price reset feature, the convertible bonds will certainly be not exchanging a fixed amount of cash for a fixed number of its own equity instruments.

In addition, with this feature, lattice model is usually not applicable in valuing such features as it is highly likely to make the conversion option path dependent.



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COMMON ISSUES

05

CONVERSION PERIOD

Some convertible bonds are not convertible for the whole term. Instead, some convertible bonds are not convertible for a period before maturity. Simply assuming such convertible bonds are fully convertible for the whole term will result in overestimation of conversion option value.

06

CONVERSION RIGHTS AND RESTRICTIONS

Sometimes, due to the concentration of equity holding by the major shareholders, conversion of convertible bonds may be subject to public float restrictions.

COMMON ISSUES

07

EARLY REDEMPTION OPTION (ISSUER'S CALL AND HOLDER'S PUT)

Early redemption or prepayment option at the option of the Company forms part of the derivative asset of the issuer whereas early redemption at the option of the holder or investor forms part of the derivative liability of the issuer. The key issue in handling accounting for such feature is to assess whether the embedded derivative should be separately from the host contract under IFRS / HKFRS 9.

08

BINOMIAL-TREE METHOD VS TRINOMIAL-TREE METHOD

Binomial-Tree method models the price of underlying assets with two possible paths: up and down paths, while the Trinomial-Tree method model the price of the underlying assets with three possible paths: up, down, and unchanged paths. Both methods are conceptually similar and provide concurring results in a normal setup. The Trinomial-Tree method usually produces results that are more stable and converge faster than the Binomial-Tree method regardless of time step-size.

COMMON ISSUES

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CREDIT OF THE ISSUERS

The effective interest rate is no doubt a crucial factor in valuation and financial reporting of a convertible bond. The effective interest rate is supposed to be the straight bond with same tenor and coupons. For those issuers without issued bonds with similar tenor and coupon, assessment of effective interest rate is necessary. Such assessment will involve studying the financial status and estimating the credit status of the issuers based on empirical data. Comparable analysis will also be applied to estimate a level of credit spread on a given credit status.

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TECHNICAL SKILLS REQUIRED FOR VALUATION OF CONVERTIBLE BONDS

In Valtech, our professionals use VBA, R, Python, C++ as appropriate for valuation of derivative instruments. All the models we used are either developed in-house or modified based on existing academic research or libraries. So we have the source codes of our model and we are able to customize for valuing any specific terms in the financial instruments.

VALUER'S ROLE

HKFRS 9

Financial Instruments set out the requirements for recognising and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items.

HKAS 32

Financial
Instruments:
Presentation

Valtech's provide professional valuation services for Convertible Notes, Convertible Bonds, Convertible and Redeemable Preference Shares. All the valuation is performed according to the terms and conditions as stated in the financial instruments. Our team has put a lot of effort in studying relevant accounting standards. We understand the concerns of accountants and auditors. Our valuation can be prepared to fulfill different kinds of interpretation of relevant accounting standards.