Modular Finance Price Adjustments

We adjust the price history of stocks using corporate actions and divide the results into two categories, Price return and Total return. The total return measures the actual investment return for the investor over the given period while the price return is a measure of the development of the stock price. The total return figure can be compared to a total return stock index (e.g. OMXSGI) while the price return figure can be compared to a regular price return index (e.g. OMXSPI).

Our total return calculation is always gross return, meaning we don't take into account foreign withholding tax for foreign investors. All adjustments are applied on the x-day of the given corporate action, in order to accurately account for the market reaction.

Corporate Action Adjustments	Price Return	Total Return
Rights Issue	Yes	Yes
Split	Yes	Yes
Dividend	No	Yes
De-Merger	Yes	Yes
Combined Split & Redemption	Yes*	Yes*
Redemption	No	Yes
Bonus Issue	Yes	Yes

**See below for more details*

Rights Issues

A company may raise funds by issuing new shares, with precedence for existing shareholders, for a given subscription price that is typically lower than the market price. E.g. a 3:2 rights issue, existing shareholders will receive subscription rights giving them the right to subscribe to three new shares for every two owned prior to the x-day. To adjust for this we apply the below adjustment:

$$\frac{P_{t-1}}{(O \times P_{t-1} + N \times L) \div (N + O)}$$

Where P_{t-1} is the close price the day before the x-day, N is the number of shares issued per O existing shares, and L is the subscription price.

Splits

Splits are a way of adjusting the nominal share price up (regular split) or down (reverse split) with a split factor. For example a 3:1 split will result in 3 shares for every 1 share you own prior to the split. The stock price will as a result of this decrease with the same factor and to make price comparable over time we apply the below adjustment.

$$\frac{N}{O}$$

Where N is the new shares issued for every O old shares.

Dividends

When a company pays dividends the share price will decrease by the same amount. For example if the stock price is 100 and the dividend is 5, this will(in theory result) in a share price of 95 and cash value of 5. To adjust for this we apply the below adjustment:

$$\frac{P_{t-1}}{P_{t-1} - D}$$

Where D is the dividend amount, P is the close price, and t is the x-day.

De-mergers

A de-merger means the company splits off an owned company, and pays its shares out as dividends to the shareholders. Typically the share price of the original stock will decrease by the same amount as the value of the shares paid out, on the x-day. We adjust the share price with the factor below:

$$\frac{P_{t-1}}{P_{t-1} - (S \times O / N)}$$

Where S is the value per share of the stock being paid out, and O is the number of shares needed to receive N shares of the new stock.

Redemptions

A company may redeem shares for cash, by issuing redemption rights that give the shareholder the option to redeem shares for a given cash value. In the case when the cash value offered is higher than the closing price the day before the x-day, we treat this as a regular cash dividend where the dividend amount is calculated as below:

$$\frac{R-P_{t-1}}{O/N}$$

Where R is the redemption price, P_{t-1} is the close price the day before the x-day, and O is the number of shares needed to redeem N shares.

Combined split and redemptions

Most combined splits and redemptions are 2:1 splits where one of the new shares is a redemption share which is always redeemed as cash. These are treated as regular cash dividends, where the redemption price is the dividend amount per share.

If the number of new shares is more than two, for example 3:1 where only one of the new shares is redeemed as cash, we treat it as a combination of a regular split and a regular cash dividend. A 3:1 combined split and redemption would then have the same adjustment as a regular 2:1 split and a regular cash dividend.

Bonus issue

A bonus issue is adjusted like a split, where for example a 2:1 bonus issue is treated as a 3:1 split. This discrepancy is because a 2:1 bonus issue means you get 2 new shares and keep the 1 old share, which is effectively a 3:1 split where your old share is converted into 3 new shares. See the split paragraph above for more details about the calculation.