



## Capital Increase - Booking

### *Description*

A capital increase consists of the augmentation in stock capital of an anonymous firm by emitting new stocks. There are different sorts of capital increase. This case will analyze an augmentation of capital by emitting new subscription rights to the stockholders. This means that the stockholders are entitled to keep their part of the stock capital to the same level in order to avoid the effect of dilution.

The following parameters are relevant for the booking of a capital increase:

Subscription right	The stockholders normally receive a subscription right per owned stock
Relation of the subscription	A certain quantity of subscription rights gives the opportunity to buy a certain quantity of new stocks to a subscription price
Subscription price	Subscription price of a new stock.
Ex-date	Execution date of the subscription rights.
Release date	Emission date of the new stocks

The stockholder receives a subscription right for every stock that he owns on the closing day before the ex-date. This subscription right is an asset on its own and a corresponding holding should be defined. At that point the stock capital still remains the same, which means that the price of a stock up to that day is the same as the price of a stock and a subscription right. A part of the book value of the stock should therefore be transferred to its subscription right. But how do we determine the correct amount to transfer? The parameters of the capital increase give us enough information to calculate the theoretical market price of a subscription right; either as an amount or as a percentage of the stock's market price (see the annex at the end of this document). This same percentage of the stock's book value should be transferred to the holding of the subscription right.

The subscription rights are now considered as a proper asset, separated from the stocks and their trade can be booked normally with regular purchase and sale transactions. When those rights are exercised, their book value has to be transferred onto the holding of the stocks. The purchase of new stocks can then be booked as a regular purchase.

The booking principle is relatively simple, but its realization can meet some practical difficulties like:

- The separation from the subscription rights will not necessarily generate a bank receipt and can therefore remain unnoticed in the securities accounting.
- The calculation of the subscription rights' price cannot be performed due to the unavailability of the required information.

Moreover, the short lifetime of the subscription rights, their relatively low prices and the effort required to book these transactions can incite to book a capital increase with certain simplifications.

For all these reasons three alternatives of the booking possibilities will be analyzed. From the "perfect" but most complex way to the easiest one, if certain shortcuts in the accounting can be accepted.

**Alternative A: "perfect"**

The subscription rights are booked as a separate position and their calculated book value is then transferred from the value of stocks to the value of the rights. Transactions on the rights can be booked directly on their holding, resulting in a perfect separation of the realized gains or losses on the rights, as well as for eventual transactions on the stocks between the ex-date and the release date, which will be booked correctly as a realized gain or loss on the stocks. Every holding list of the portfolio between the two dates will also be correct, since the rights consist of a separate holding. On the release, the book value of the rights will be transferred to the one of the stocks and the exercise of the supplementary rights is booked as a regular purchase of stocks.

**Alternative B: "intermediary"**

The subscription rights are booked as a separate position, but no book value is transferred from the holding of the stocks to the holding of the rights. Therefore the holding of the right has a book value of zero. Transactions on the rights are booked on the rights' holding but the realized gains and losses will be incorrect. The eventual transactions on the stocks between the ex-date and the release date will also lead to incorrect realized gains or losses on stocks. However every holding list between these two dates will be exact since the rights are booked on a separate holding. On the release, the book value of the rights which could result of transactions on the rights will be transferred on the stocks' holding and the exercise of the right is booked as a regular purchase of stocks.

**Alternative C: "simple"**

The subscription rights are not booked as a separate holding. Transactions on the rights are booked on the stocks' holding which will lead to a change in the book value of the stocks (a raise for purchases or rights and a decrease for a sale of rights). No realized gains and losses will be booked. Eventual transactions on the stocks between the ex-date and the release date will lead to incorrect realized gains or losses on the stocks. Every holding list of the portfolio between these two dates will be incorrect since the rights are not considered as a separate holding. On the release, the exercise of the rights is booked as a regular purchase of stocks.

These three alternatives will be now explained with concrete examples.

***Example: Capital increase of the UBS AG of June 2008***

This concrete example is based on a capital increase of the UBS AG which took place in June 2008.

**Definition of the capital increase**

The shareholders of the UBS AG accepted the offer of an increase of capital by emitting new stocks, proposed by the board of directors on the general assembly of the 23rd of April 2008. This capital increase is defined as followed:

Subscription right	For every nominative UBS AG stock owned at the closing date of the 26th of May 2008, a subscription right will be received (value number 3991389).
Relation of the subscription	20 subscription rights which allows the shareholder to buy 7 UBS AG new stocks. Please note that the exercise of the

rights can only be done on the basis of 20 rights or a multiple of 20 rights.

Subscription price	21 CHF per new UBS AG nominative stock.
Ex-date	27th of May 2008
Delay of subscription	Until the 12th of June 2008
Trade period of the rights	From May 27th until June 9th 2008
Release	17th of June 2008

## Sequence of the operations

### May 26th 2008

On this closing date 300 nominative UBS AG stocks are owned, each with a book price of CHF 41.25 and a total book value of CHF 12'375.-. The closing price of the stock on this day is CHF 28.20.

### May 27th 2008

300 subscription rights are received (value number 3991389).

### May 30th 2008

We sell 60 subscription rights with a price of CHF 1.70.

### June 17th 2008

The exercise of the 240 rights left is executed for the purchase of 84 new UBS AG nominative stocks with a subscription price of CHF 21.-.

## Booking according to alternative A

On May 27th the subscription rights are booked, which means a new separate holding is opened for the rights. The below calculated price for the subscription rights of CHF 1.87 represents a part of 6.63% from the stock price of CHF 28.20. Therefore a book value of CHF 820.46 (= 6.63% of 12'375) of the stocks will be transferred on to the subscription rights. The following book values are the following, as of May 27th:

Holding	Quantity	Book Price	Book Value
Stocks UBS AG	300	38.515133	11'554.54
Rights	300	2.734867	820.46
Total			12'375

The trade from the stocks and the rights will result of a correct booking of the realized gains or losses.

On May 30th, 60 of the 300 subscription rights are sold with the price of CHF 1.70. The sale is normally booked with the realized loss of CHF 62.09 (= 60 \* (1.70 - 2.734867)). The following book values are the following, as of May 30th:

Holding	Quantity	Book Price	Book Value
Stocks UBS AG	300	38.515133	11'554.54
Rights	240	2.734867	656.37

On June 17th, the 240 remaining subscription rights are exercised to get 84 new UBS AG nominative stocks with the subscription price of CHF 21. The book value of these 240 rights is therefore transferred to the stocks. The acquisition of the 84 stocks is booked as a regular purchase. We now have the following book values, especially the book value of the stocks of CHF 13'974.91 = 11'554.54 + 656.37 + (84 \* 21):

Holding	Quantity	Book Price	Book Value
Stocks UBS AG	384	36.392995	13'974.91
Rights	0		0

### **Booking according to alternative B**

On May 27th the subscription rights are booked, which means a new separate holding is opened for the rights. No book value transfer is done between the stocks and the subscription rights. The following book values are the following, as of May 27th:

Holding	Quantity	Book Price	Book Value
Stocks UBS AG	300	41.25	12'375
Rights	300	0	0
Total			12'375

The trade from the stocks and the rights will result of an incorrect booking of the realized gains or losses since the stocks will be overvalued and the subscription rights undervalued.

On May 30th, 60 of the 300 subscription rights are sold with the price of CHF 1.70. The sale is normally booked with the realized gain of CHF 102 (= 60 \* (1.70 - 0)). The following book values are the following, as of May 30th:

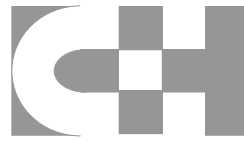
Holding	Quantity	Book Price	Book Value
Stocks UBS AG	300	41.25	12'375
Rights	240	0	0

On June 17th, the 240 remaining subscription rights are exercised to get 84 new UBS AG nominative stocks with the subscription price of CHF 21. The acquisition of the 84 stocks is booked as a regular purchase. We now have the following book values, especially the book value of the stocks of CHF 14'139 = 12'375 + (84 \* 21):

Holding	Quantity	Book Price	Book Value
Stocks UBS AG	384	36.820313	14'139
Rights	0		0

### **Booking according to alternative C**

On May 27th the subscription rights are not booked, which means that no new separate holding is opened for the subscription rights. The sale of the 60 rights on May 30th is booked as a reduction of the book value of the stocks of CHF 102 (= 60 \* 1.70). The book values are the following, as of May 30th:



Holding	Quantity	Book Price	Book Value
Aktien UBS AG	300	40.91	12'273

The trade from the stocks and the rights will result of an incorrect booking of the realized gains or losses since the stocks will be overvalued. The trade of the subscription rights will lead to no booked gains or losses; it only modifies the book value of the stocks.

The exercise of the rights is booked as a regular purchase and we now have the following book values on May 17th, especially the book value of the stocks of CHF 14'037 = 12'273 + (84 \* 21):

Holding	Quantity	Book Price	Book Value
Stocks UBS AG	384	36.554688	14'037

### Calculation of price of the subscription right used in this example

The closing price of the nominative UBS AG stock on May 26th 2008 is of CHF 28.20. This price will be  $P_{old}$ . Now let's calculate the price of the subscription right. The calculate price for the stock after the separation from the rights will be defined as  $P_{new}$  and the calculated price of the subscription rights as  $P_{right}$ . We suppose that we have 20 stocks and therefore have the following equations:

$$20 * P_{old} + 7 * 21 = 27 * P_{new}$$

$$20 * P_{old} - 20 * P_{right} = 20 * P_{new}$$

The first equation tells us that if the subscription rights are exercised, we will receive 27 new stocks. The second equation tells us that if we sell all our subscription rights, we will still have all our 20 stocks.

This leads us to a price for the subscription rights  $P_{right}$  of CHF 1.87 or 6.63% of  $P_{old}$ , the stock's price before its separation from the rights. This price could have also been calculated directly with the formula given in the annex which will give the price of the subscription rights. Our example has the following values:

- $q = \frac{7}{20}$
- $P_{old} = 28.20$
- $P_{subs} = 21$

### ePOCA: optimal assistance of the user

ePOCa, our software for securities accounting and investment reporting optimally assists the user with the booking of corporate actions.

1. For a booking according to alternatives A or B, the capital increase is defined as 2 "corporate actions" in ePOCA. The first one consists of the rights' separation which defines that 6.63% (alternative A) or 0% (alternative B) of the book value of the stocks should be transferred to the holding of the rights. The second is the exercise of the rights which will define that 100% of the book value of the subscription rights should be transferred to the stocks. The outgoing and incoming

transactions only require the quantities in order to be booked. It is unnecessary to calculate the book value to transfer since this step is executed by the software.

2. For a booking according to alternative C, ePOCA has specific transactions for the trading of the rights that simply adjust the book value of the stocks accordingly.

### **Annex: Calculation of the price of the subscription right**

The following variables are defined:

- $P_{old}$  as the closing price of the stock before the separation from the subscription right, which means the date before the ex-date. This price is known.
- $P_{subs}$  as the subscription price of a new stock. This price is given by the capital increase.
- $q$  as the quantity of new stocks which can be acquired with one subscription right. This quantity is given by the capital increase.
- $P_{new}$  as the calculated price of a stock after the separation of the subscription rights. This price can be calculated.
- $P_{right}$  as the calculated price of a subscription right. This price is calculated.

We then have the following equations:

$$P_{old} + q * P_{subs} = (1 + q) * P_{new}$$

$$P_{old} - P_{right} = P_{new}$$

The first equation tells us that after the exercise of the subscription rights for one stock we have  $(1 + q)$  new stocks. The second equation tells us that if we sell the subscription right of a stock, we still possess one stock.

These 2 equations give us the following formula to calculate the price of a subscription right:

$$P_{right} = \frac{q * (P_{old} - P_{subs})}{1 + q}$$



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[www.chsoft.ch](http://www.chsoft.ch)