MARKET VALUATION SECURITIES

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This article deals with the issues of market valuation of securities held in bank portfolios, in particular the determination of their market price. In this context, we will point out some differences between the Slovak accounting standards (SAS) and international accounting standards (IAS 39) in expectation of the introduction of IAS 39 in Slovakia from 1 January 2003.

Banks hold securities in four different portfolios: held to maturity (banking book), held for trading (trading book), available for sale and acquired in primary market. Securities in the held to maturity portfolio are held until the maturity date in order to earn the interest. That is why rather than marking an investment portfolio to market, these securities should be amortised to maturity (also known as the pull-to-par method). Income on securities in the held to maturity portfolio has two components:

1. coupon,
2. amortisation, i.e. the pull-to-par effect (the effect resulting from the difference between the acquisition cost and the pull-to-par price) – if the acquisition price was lower than the nominal value (otherwise, the result is a loss – the acquisition price is higher than the nominal value).

We will illustrate amortisation on the following example:

On 1 October 2001, we bought a two-year-old security AB with a nominal value of SKK 1 million (maturing on 30 September 2003) for SKK 985,000. We are going to keep it in the banking book till maturity. Since we paid SKK 985,000 for it, the gain from price difference will be SKK 15,000. This gain, however, must be spread evenly over the entire two-year holding period. This is how we can calculate the price of the security AB as at 31 October 2002:

[(1,000,000 – average price) / (maturity date – purchase date)] **.** (current date – purchase date) + average price
[(1,000,000 – 985,000)/729) **.**395 + 985,000 = 993,100]

We will use the same formula to compute the price as at 31 December 2001 (996,800). The difference between these two prices multiplied by the par value is the portion of the gain to be included in year 2002 profits as at 31 October 2002 (figure 1).

The situation is a bit more complicated in the held for trading (trading book) and available for sale portfolios, where we purchase securities not only to earn the interest income, but also to profit from price movements at the market.

According to IAS 39, securities held in these portfolios should be carried at their fair value. Generally, that would be the market price. If it cannot be determined, however, the price should be estimated using reliable methods. In extraordinary cases, where neither the market price nor a reliable price assessment method is available, the acquisition price is used instead.

We will show the differences between the currently applicable Slovak accounting standards (SAS) and IAS 39 on a simple trading portfolio, we will value at market price (a market price is available), again illustrated on an easy example for better understanding:

On 1 October 2001, we bought a three-year-old security with a nominal value of SKK 1 million for SKK 950,000 (book value). The market price was SKK 980,000 on 31 December 2001, the current market price is SKK 1.02 million.

By Slovak accounting standards, on selling the security (assuming we sell it at market price) in 2002, we would realise a gain of SKK 70,000 (figure 2):

(market price – book value) **.** nominal value/100

However, by IAS 39 methodology, a part of the gain would have to be attributed to the last year. Thus, under IAS 39, the 2002 profit would be calculated as follows (figure 3):

(market price – price as at 31 December 2001) **.** nominal value/100

As a result, by IAS 39, we have realised a gain of SKK 30,000 in 2001 already (980,000-950,000), with only SKK 40,000 recognised as profit in 2002 (1,020,000 – 980,000). So while a bank accounting by SAS will report a SKK 70,000 profit in its profit and loss account, a bank applying IAS 39 will report SKK 40,000 only. That is why this year, before the introduction of IAS 39 in Slovakia on 1 January 2003 as noted above, it will still be important to know the standards by which banks calculate their profits.

Let us take a closer look now at the problem of market price determination. This seemingly simple task does have its pitfalls.

The Accounting Act No. 431/2002 Z.z. defines the market price as the price published by a national or foreign stock exchange or another public market. It also stipulates that:

Figure 1

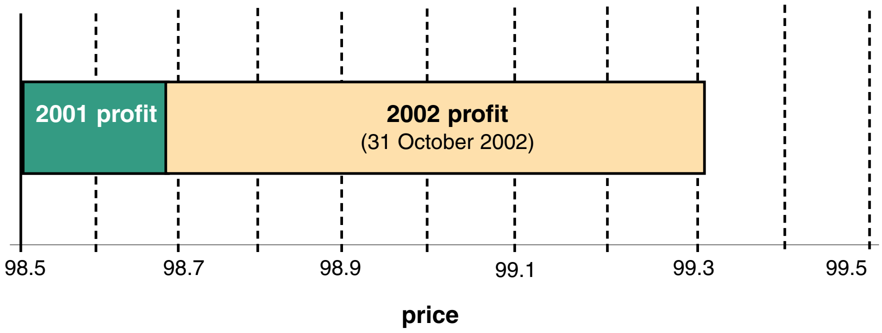


Figure 2

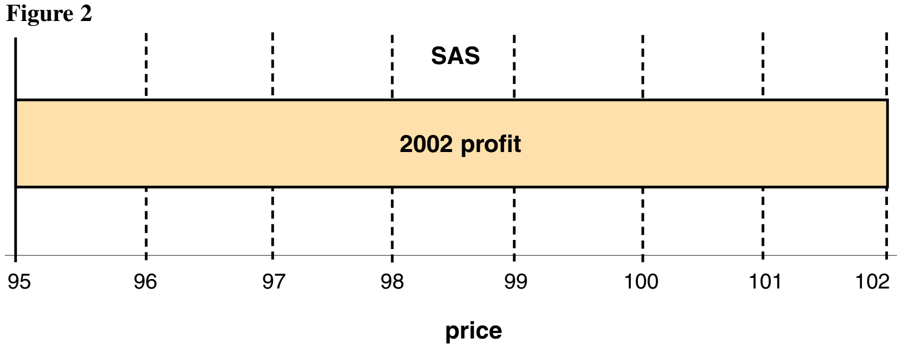
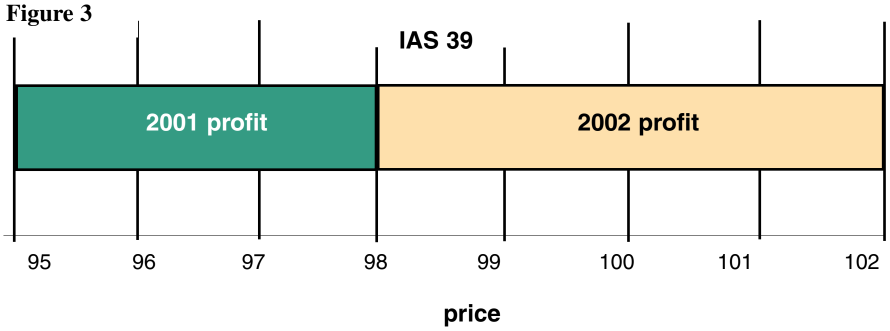


Figure 3



1. if an asset is listed on a national stock exchange, the market price is the closing price published by the stock exchange on the valuation date;

2. if an asset is not listed on a national stock exchange, but is listed on foreign stock exchanges, the market price equals the highest of closing prices reached on approved markets of foreign stock exchanges on the valuation date. In case of public OTC markets, the market price is the highest price achieved on the valuation date. If the valuation date is not a trading day on these markets, the price used will be that published on the last trading day preceding the valuation date;

3. if the market price cannot be determined in a reliable manner, the fair value will be determined by a qualified assessment combining all future expenditures and income using the prevailing interest rate applied to similar instruments of an issuer with a similar rating, or an interest rate which reduces the nominal value of the instrument concerned by the instrument's interest discount to a price at which the instrument would be sold;

4. if no fair value can be determined on the valuation date, the fair value will be deemed to equal the acquisition price.

But how do we ascertain the price by a qualified estimate, if the market price cannot be determined with the necessary degree of reliability? Whenever determining the market price by a qualified estimate, i.e. synthetically, it is important to know:

– whether the coupon is fixed or variable;
– time to maturity;
– risk premium;
– coupon rate;
– coupon frequency;
– rate to maturity.

For easier understanding of the calculation, we will use another example. In our portfolio (either held for trading or available for sale), we have a government security maturing on 13 March 2012 (time to maturity is about 113 months), with a 7.5% coupon paid once a year. Since there is no market price available, we will try to calculate it, for instance as at 7 October 2002.

So we have the first five calculation inputs (risk premium is 0% for sovereigns), but how can we find out the rate to maturity? Described below is one of the ways how we can construct our own valuation curve from available prices of securities with different maturities.

We go to the Reuters pages to obtain the prices, yields on government securities (ours is included), listed by individual financial market participants. It is vital to pick the right pages, as pages which are not updated regularly could distort our long-term curve which could then vary considerably from the actual market situation. That is why it is important to refer to reputable pages, where securities prices are quoted regularly. We take the data to build our own curve for securities valuation. Let us assume, that the curve suggests a 6.254% rate to maturity for our particular security at 113 months to maturity.

Once we have this data, we can calculate the price of our security using the following Microsoft Excel function: PRICE (Settlement, Maturity, Rate, Yld, Redemption, Frequency, Basis).

Figure 4

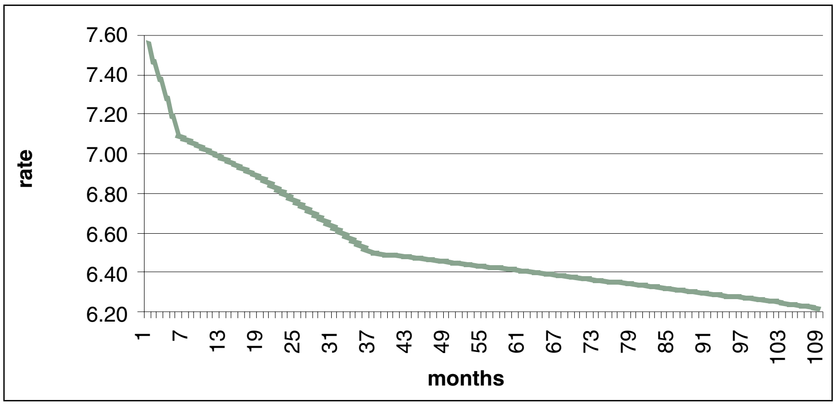
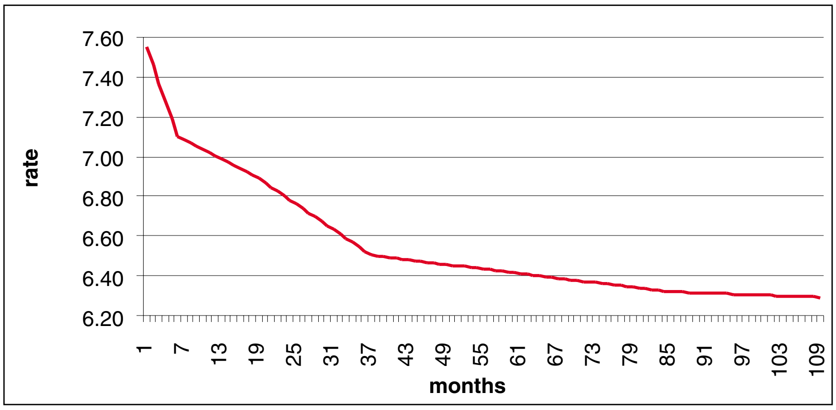


Figure 5



With securities having a risk premium higher than 0%, we need to add the risk premium required as extra yield over the yield on sovereigns. Similarly, we will add a higher yield on sovereigns carrying a coupon higher than the government security referred to for the given period in the curve.

But to get back to our example. We have valued the security at SKK 1,086,255, using a yield to maturity of 6.254% (figure 4). However, if another bank uses its own curve for synthetic valuation of the same security, which differs from our curve, and applies a rate to maturity of, say, 6.3%, it will arrive at a price of SKK 1,082,874 million (figure 5).

Thus, if two different banks apply different rates to maturity, they will end up with different values for the same security. Assuming that both banks purchased the security with a nominal value of SKK 1 million for the same price, e.g. SKK 1,050,000, the former bank will be reporting a gain of SKK 3.6255 million (1,086,255 – 1,050,000), whereas the latter will show a profit of just 3.2874 million (1,082,874 – 1,050,000). This means that on the same date and for the same security, two different banks will be reporting different gains and, consequently, different taxes.

Since a situation like this should not be allowed to happen, a single benchmark curve must be defined for synthetic price calculations that all banks would refer to.

As an example of co-operation in this area, several Slovak banks teamed up with Reuters to launch the Reuters SK – Benchmark page (figure 6), which provides daily quotes of securities determining the long-term benchmark curve banks can use to valuate their portfolios. This curve is also perceived as an indicator of SKK developments by foreigners, as we have only had the 1-year curve so far (BRIBOR). Unfortunately, the criteria on securities listed on this page have not been completed, so the page cannot be recognised as an official reference for securities valuation by qualified estimates.

However, the synthetic approach to securities valuation by qualified estimates will only be applied where the market price cannot be determined reliably. In Slovakia, the Bratislava Stock Exchange is the price-setter of reference for all financial market participants. At this point, however, several questions remain to be answered. For instance, how do we value a security properly when the stock exchange has been closed for trading for several days in a row (e.g. during Christmas)? Is a two-week-old price of a security its real market price? And what if the rates move during that period? In that case, a two-week-old price cannot possibly reflect the actual market price. Will we still be able to evaluate our portfolios correctly at the end of the year in a case like this?

Figure 6

0#SKBMK= SK - BENCHMARK

Issue/Issuer	Coupon	Maturity	Latest		Yield:		Time	Date	Source
3M DEPOSIT RATE			B↓ 7.600	A 7.900	7.600	7.900	08:51	15OCT	
6M DEPOSIT RATE			B↓ 7.500	A 7.700	7.500	7.700	09:33	15OCT	
1Y T-BOND	12.000	03FEB03	B↓ 100.880	A 101.080	8.213	7.572	08:19	15OCT	HVSKB
2Y T-BOND	7.800	15FEB04	100.300	A 100.700	7.503	7.179	08:19	15OCT	HVSKB
3Y T-BOND	9.000	06APR05	B↑ 104.850	A 105.350	6.768	6.551	15:04	14OCT	CSBC
5Y T-BOND	7.800	16JAN07	B↓ 104.270	A 104.770	6.602	6.467	00:03	14OCT	INBE
8Y T-BOND	8.500	17AUG10	B↑ 113.300	A 113.800	6.292	6.216	15:04	14OCT	CSBC
9Y T-BOND	8.300	19SEP11	B↓ 112.750	A 113.250	6.379	6.309	08:19	15OCT	HVSKB
10Y T-BOND	7.500	13MAR12	108.410	A 108.910	6.281	6.213	00:00	14OCT	SVBQ