

Research Department

**“Comit Small Cap” Index**  
**(base 2/4/01=100)**  
**Calculation method**

The old family of Comit indexes is based on all Italian stocks traded on the Mercato Telematico Azionario (MTA – the Screen-Based Stock Market) and on the Nuovo Mercato (NM). In detail:

**MARKET**

**INDEXES**

<b>MTA</b>	<b>BCI All-Share ®/ BCI Performance ®</b>	<b>BCI All-Share R/ BCI Performance R</b>
<b>NM</b>	<b>BCI NM</b>	<b>BCI NM R</b>
<b>MTA + NM</b>	<b>BCI All-Share+ ®/ BCI Performance+ ®</b>	<b>BCI All-Share+ R/ BCI Performance+ R</b>

*As of 2/4/2001, two new indexes were added:*

<b>MTA</b>	<b>BCI Small Cap</b>	<b>BCI Small Cap R</b>
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**Specifications for the “BCI Small Cap” index**

**1 - Shares forming the index**

The **“Comit Small Cap”** index consists of domestic ordinary shares listed on the Mercato Telematico Azionario (MTA – screen-based equity market), excluding the following shares:

- a) those already included in the blue chip index which are also the underlying assets for futures contracts (ex. MIB 30 and Midex);
- b) those whose average capitalization exceed €2 billion (with reference to the half-year period prior to the extraordinary revision date);
- c) those with low liquidity levels. According to this criterion shares included in the ordinary segment – class 2 as defined by Borsa Italiana at the time of revision – are eliminated.

**2 - Index revision**

Changes to the basket are made:

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- 2.1) on an ordinary basis, one time a week, coinciding with the ex-dividend date as scheduled on the stock market calendar set by the Borsa Italiana S.p.A.: shares no longer listed and/or undergoing other changes in capital eliminated;
- 2.2) on an extraordinary basis, twice a year, in March and September based on point 1). The new basket will be effective on the fifth business day of the same month as set by the Borsa Italiana calendar.

**3) - Index calculation methods**

**3.1 Official price index**

The “BCI Small Cap” index is calculated daily in real time based on changes in *official prices*. The index base is set at 100 as at 2/4/2001.

**3.2 Reference-price index**

The “BCI Small Cap R” index is calculated daily at the close of the session based on reference prices. The index base is set at 100 as of 2/4/2001.

Leaving aside for a moment the problem of transactions involving capital which lead to discontinuities in recording the prices of the share involved (the problem is treated briefly below), our index of the *i*th share on the list at time *t* is given by:

$$I_{i,t} = \frac{P_{i,t}}{P_{i,0}} \cdot 100$$

where  $P_{i,t}$  = the price of share *i* on day *t*

and  $P_{i,0}$  = the base price (or at time zero) of share *i*

So the “BCI Small Cap” market indexes will be equal to the weighted average of the indexes for all shares; in other words:

$$I_t = \sum_{i=1}^n I_{i,t} \cdot a_i$$

where  $I_t$  is the index at time *t* and  $a_i$  represents the “weight” of each share in the index. In particular, the weighting method applied is given by the following ratio: the capitalization of the individual share (price \* the number of outstanding shares) / total market capitalization.

After due simplifications, the indexes assume the following form:

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$$I_t = \frac{\sum_{i=1}^n P_{i,t} \cdot q_{i,0}}{\sum_{i=1}^n P_{i,0} \cdot q_{i,0}} \cdot 100$$

where  $q_{i,0}$  represents the unchanged number of outstanding shares at time  $t$  as a result of the simplifying assumption initially introduced.

**4 - Note on the adjustment methods**

In reality, each year there are several transactions involving the capital of listed companies and other events may also take place which lead to discontinuities in the data series used in calculating the index. One typical case is the delisting of a share. In such events, the quantity of shares in circulation changes and so does  $q_{i,t} \neq q_{i,0}$ , or, the base capitalization to which paid-in increases are made must change as a result of this injection of fresh liquidity.

In order to carry on with the index calculation it is necessary to restore the lost continuity using various methods which are labeled as “adjustments”.

The adjustment is made on the base capitalization: for example, in the classic case of a paid-in capital increase, the base capitalization is changed by the same proportion as the actual capitalization increases for the injection of fresh liquidity, according to the following formula:

$$\text{adjusted base capitalization} = \text{base capitalization} \cdot \frac{\text{cap. before dividend payment} + \text{liquidity injection}}{\text{cap. before dividend payment}}$$

allowing the index values to be comparable over time.

Ultimately, the “BCI Small Cap” indexes will be generated by the formula:

$$I_t = \frac{\sum_{i=1}^n P_{i,t} \cdot q_{i,t}}{\left(\sum_{i=1}^n P_{i,0} \cdot q_{i,0}\right) \text{ rett.}} \cdot 100$$

expressed in another way:

$$I_t = \frac{\text{stock market capitalization at time } t}{\text{adjusted base capitalization at time}} \cdot 100$$

**5 – Index publication**

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The **“BCI Small Cap”** indexes are published through the major information providers and Reuters on the following “ric”:

- “Small Cap index” (official prices): **.BCISC**
- “Small Cap index” (reference prices): **.BCISCR**

The “BCI Small Cap” and “BCI Small Cap R” date back to December 30, 1998.