Rep. Of Korea

Analysis and synthesis

January 9, 2018
Korean Market (Reference KOSPI50)
Closing price of January 9, 2018

The Korean market represents less than 1% of the worldwide market capitalization with 138 companies being followed by the Screener. The index, KOSPI50, is currently trading close to its 52 week high and 28% above its 52 low (bi-weekly closing).

Performance since January 10, 2017: 27.6% vs. 9.9% for the DJ Stoxx 600 and 21.3% for the SP500.

The current % of stocks over their Medium Term technical trend (MTT) is 42.9%.

Price evaluation rating
In order to assess whether an index is correctly valued, we focus on Peter Lynch’s broadly accepted methodology of comparing the projected earnings growth and dividend with the estimated PE ratio. Based on this approach, we feel this index is currently strongly undervalued.

A “Forecasted Growth + Estimated Dividend Yield/ Estimated Price Earnings” ratio higher than 0.9 indicates that the index’s price includes a discount to growth of -35.4%.

Earnings revision trend
Compared to seven weeks ago, the analysts have raised (1.9%) their earnings estimates. This positive trend began October 17, 2017 at a price of 2,232.0.

Performance over 5 years
On a 5 year moving average, the performance of the index KOSPI50 is 28.9%, vs. 39.4% for the DJ Stoxx 600 and 86.9% for the SP500. During this period, the high of 2,309.5 was reached on November 2017 and the low of 1,371.0 in the month of August 2015. It’s worth noting that since 5 years ago the EUR vs. the KRW evolved negatively by -9%. The returned performance in KRW is 28.9%, vs. 27.3% for the DJ Stoxx 600 and 90.9% for the SP500.
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Volatility

Volatility is also used as a sensitivity factor. It measures the magnitude of upward and downward movements of a stock or index. The higher the volatility, the more an index is considered as sensitive.

As of the last update, the monthly volatility of (12.4%) is lower than the last few years' average of (12.6%). The low magnitude of short term price fluctuations indicates a lull in the market.

On the other hand, long term volatility 11.3% of the index is similar to that of the index DJ Stoxx 600 (8.8%), reflecting almost identical price variations between this market and the market European.

The sensitivity factor in declining markets

The "Bear Market Factor" measures the behavior of an index in declining markets. In this context, the index KOSPI50 has a tendency to minimize the drops of the index TSC_World.

This would indicate a low sensitive behaviour of the index during market corrections. The index KOSPI50 has a tendency to minimize drops in the index TSC_World by -0.13%.

The sensitivity factor in rising markets

The "Bad News Factor" measures the index's corrections during rising international markets.

In this configuration, the market normally sanctions the index KOSPI50 when there is specific pressure in this particular economic activity. When the index declines in a rising world market its average deviation is -1.04%.

Sensitivity analysis summary

Generally speaking, the KOSPI50 index shows an average sensitive behaviour, in line with other equity indices because of a medium Bad News Factor.

Checklist (KOSPI50)

<table>
<thead>
<tr>
<th>Stars</th>
<th>Weak interest since December 1, 2017.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings Rev Trend</td>
<td>Analysts positive since October 17, 2017</td>
</tr>
<tr>
<td>Valuation Rating</td>
<td>Strongly undervalued</td>
</tr>
<tr>
<td>MT Tech Trend</td>
<td>Market neutral but previously negative (since December 1, 2017)</td>
</tr>
<tr>
<td>4wk Perf</td>
<td>4 weeks price performance</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>The index has been on the &quot;moderate sensitivity&quot; level since December 22, 2017.</td>
</tr>
<tr>
<td>Bear Mkt Factor</td>
<td>Below average sensitivity to market corrections</td>
</tr>
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<td>Bad News Factor</td>
<td>Fair market sanction in case of specific pressure</td>
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Since the beginning of the year, the index KOSPI50 recorded a variation of 1.3%. The market is made up of 18 groups, in which the extreme variations were from -4.9% to 18.3%.

Groups by market capitalization Korean

The largest group in terms of market capitalization, Technology, represents 38.1% of the Korean market. In order of size, follow Personal & Household Goods with 7.8% Automobile & Parts with 6.7%.
### 2018 performance of the 20 largest stocks

<table>
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<tr>
<th>Index</th>
<th>Value</th>
<th>Performance</th>
<th>Nb of Stocks</th>
<th>Market Cap in $bn</th>
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<th>G/P/E Ratio</th>
<th>LT P/E</th>
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<td>1,097.55</td>
<td>1.39</td>
<td>8.2</td>
<td>9.2%</td>
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The 12 month performance of the 20 largest stocks

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### Top Stocks 2018

Since the beginning of the year, the performance of the index was 1.3%; as for the three best stocks, (CELLTRION INCORPORATED (A068270), HYUNDAI HEAVY IND.S. (A000660) and HYUNDAI MIPO DKY.CO.LTD. (A010620)), their performance was 32.3%, 22.9% and 21.5% respectively.

### Flop Stocks 2018

SK MATERIALS CTD. (A036490), NETMARBLES GAMES CORP. (251270) and WONIK HOLDINGS CTD. (A030530) with -13.8%, -10.6% and -8.9% recorded the three worst performances since the beginning of the year. For the index KOSPI50, the variation was 1.3%.

### Top Stocks 12 months

Since 12 months ago, the performance of the index has been 27.6%; the three best stocks, (CELLTRION INCORPORATED (A068270), LOTTE FINE CHEMICAL CTD. (A004000) and HANMI PHARM CTD. (A128940)) recorded a performances of 187.2%, 127.2% and 122.8% respectively.

### Flop Stocks 12 months

The three worst performances in 12 months were recorded by KOREA AEROS.INDS.LTD. (A047050), KEPCO PLANT SER. & ENGR. (A051600) and POSCO DAEWOO CORP. (A047810) with -30.6%, -29.5% and -25.9%. As for the group , it recorded a variation of 27.6%.
The global ranking (Global Evaluation) is a multi-criteria approach that identifies the stocks with the best valuations. This assessment is the compilation of fundamental (PE, growth, earnings revisions, dividend, etc.), technical (moving average, relative performance), and sensitivity (behaviour in declining markets and sensitivity to bad news) factors. In order to present the best selection, only companies with a market capitalization greater than $1bn and showing good earnings growth valuations are listed. Furthermore, the eligible stocks must have a minimum rating of two stars; a neutral to positive valuation; a low to moderate sensitivity. When the global rankings are identical, the analysts’ 7 week earnings per share revision (7 wk EPS rev) acts as the deciding classification element.

The sensitivity assessment is based on essentially two criteria: the stock’s “behaviour in declining markets” (Bear Market Factor), and the stock’s “sensitivity to bad news” (Bad News Factor). By positioning a stock according to the world averages, three sensitivity levels can be attributed (low, moderate, high). Combining these elements makes it possible to create a final ranking of stocks in the market. To present the most useful selection, only companies with a market capitalization greater than $1bn and showing good earnings growth valuations are listed. Furthermore, the eligible stocks must have a minimum rating of two stars; a neutral to positive valuation; a low to moderate sensitivity. In case of a tie, the stock’s “behaviour in declining markets” will act as the deciding classification element.
The price to earnings ratio (PE) helps to find undervalued stocks. It is commonly accepted that if the PE of a stock is lower than the PE of its reference market, the stock has upward price potential. In order to present the best selection, only companies with a market capitalization greater than $5bn and showing good earnings growth valuations are listed. Furthermore, the eligible stocks must have: a minimum rating of two stars, a neutral to positive valuation, a low to moderate sensitivity. When the PE ratios are identical, the analysts’ 7 week earnings per share revision (7 wk EPS rev) acts as the deciding classification element.

### The 20 top stocks classified by market capitalization

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<tbody>
<tr>
<td>A000880</td>
<td>HANWH CORP. Diversified Industrials</td>
<td>KR</td>
<td>45,850.00</td>
<td>4.46</td>
<td>41</td>
<td></td>
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<tr>
<td>A000660</td>
<td>SK HYNIX INC. Semiconductors</td>
<td>KR</td>
<td>76,900.00</td>
<td>52.46</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>A139130</td>
<td>DBG FINANCIAL GROUP CTD. Money Center Banks</td>
<td>KR</td>
<td>10,800.00</td>
<td>1.71</td>
<td>49</td>
<td></td>
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</tr>
<tr>
<td>A138890</td>
<td>BNP FINANCIAL GP.INCO. Money Center Banks</td>
<td>KR</td>
<td>9,560.00</td>
<td>2.92</td>
<td>51</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>A011170</td>
<td>LOTTE CHEMICAL CORP. Commodity Chemicals</td>
<td>KR</td>
<td>384,500.00</td>
<td>12.35</td>
<td>52</td>
<td></td>
<td></td>
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Number of Stocks
The number of stocks in the index that can be analyzed.

Mkt Cap in $bn
This number represents the Market Capitalization in USD bn. It is calculated by multiplying a firm's share price by the number of outstanding shares. For reasons of comparison, all results are in USD.

Valuation Rating
Our Valuation Rating indicates if a stock is "expensive" or "cheap" relative to its growth potential. This is used to determine whether or not the investor is paying a premium for anticipated growth.

To estimate a stock's value relative to its current price, our Valuation Rating combines:

- stock price
- projected earnings
- projected earnings growth
- dividend

We establish our rating by combining these elements.

There are five ratings, ranging from strongly undervalued (▲) to strongly overvalued (▼).

Stars
theScreener.com's star rating system is designed to enable you to identify high-quality stocks quickly and easily.

In this easy-to-use rating system, stars are earned for each element specified below:

- Earnings Rev Trend (▲▲▲▲)
- Valuation Rating (▲▲▲▲)
- MT Tech Trend (▲▲▲▲)
- 4 week Relative Performance > 1% (▲▲▲▲)

Therefore, a stock can earn a maximum of four stars.

The lowest rating a stock can have is no stars.

Once a stock has earned a star, it will keep it until:

- Earnings Rev Trend becomes negative (▲)
- Valuation Rating becomes negative (▲)
- MT Tech Trend becomes negative (▲)
- 4 week Relative Performance drops below -1% (<-1%)

Div
This is the dividend in % for the next 12 months. Even if the same number is shown, the dividend value can appear in one of four colors, depending on the earnings coverage:

- 0%, no dividend
- 4%, the dividends are covered (between 0% and 40% of earnings)
- 4%, the dividends represent between 40% and 70% of earnings
- 4%, the dividends are higher than 70% of earnings, which implies that the dividend coverage is not guaranteed.

Earnings Rev. Trend
The symbol (▲) shows that compared with their earnings revisions seven weeks ago, the analysts have now raised their estimates (7wk EPS Rev; > 1%); the symbol (■) indicates that compared with their earnings revisions of seven weeks ago, the analysts have now lowered their estimates (7wk EPS Rev < -1%).

When the earnings revisions (7wk EPS Rev) fall between +1% and -1%, the trend is considered to be neutral (○).

The symbol (■) indicates that the last significant revisions have been trending positive.

The symbol (▲) indicates that the last significant revisions have been negative.

7wk EPS Rev
This is an abbreviation for 7 week Earnings Per Share Revision. This column indicates the value of these revised earnings. A figure of 2.8 signifies that compared with seven weeks ago, the analysts have now revised and raised their estimates by 2.8%. On the contrary, a negative number means that the earnings would have been revised lower.

G/P Ratio
In order to establish our Valuation Rating, we calculate the estimated growth of future earnings (LT Growth) plus dividend in %, divided by the estimated future PE ratio (Long Term P/E).

LT PE
This is the relationship between the price (P) and the estimated long-term future earnings (E LT).

LT Growth
This is the estimated annual growth rate of future earnings, normally projected over the next two to three years.

MT Tech Trend
The MT Tech Trend indicates the current trend, positive (▲) or negative (■), and the Tech Reverse indicates up to which price this trend will remain valid.

When a price falls to 1.75% above or below the Tech Reverse, the MT Tech Trend is considered neutral (○).

Once the price breaks out of the +1.75% neutral zone, the MT Tech Trend will change to positive.

The symbol (▲) indicates that the previous MT Tech Trend was positive.

The symbol (■) indicates that the previous MT Tech Trend was negative.

4wk (Rel) Perf.
This figure measures the performance of a stock relative to its national or regional index over four weeks ago. As for an index, it measures the net performance over 4 weeks.

Bad News Factor
To determine the "Bad News Factor" we analyze a stock's declines in rising markets. In this purely objective analysis, the actual reasons for a stock's behavior are not important.

If a stock price falls while its relative index goes up, it can be assumed that the stock's performance has been affected by bad news - hence the name, "Bad News Factor".

Here a stock's movements are measured on a bi-weekly basis, during a sliding 52 week period. Every time a stock drops while its reference index rises, the difference is calculated in %, integrated into a yearly average and expressed in basis points. The higher the "Bad News Factor," the more a stock has proven to be sensitive to bad news.

The lower the "Bad News Factor," the less the stock has proven to be sensitive to bad news.

Bear Market Factor
To determine the "Bear Market Factor" we analyze a stock's price movements in declining markets.

This is the analysis of the movements, in a bi-weekly intervals, during a sliding 52 week period.

The higher the "Bear Market Factor," the greater the probability a stock would drop when its relative index drops.

A "Bear Market Factor" that is strongly negative means the stock has been more resistant to losses in declining markets.

Sensitivity
Stock price developments are generally volatile and contain high risks that can result in a total loss. Based on their historical behaviour, stocks are classified by sensitivity level.

These sensitivity levels have to be considered solely in relative historical comparison to other stocks. Please note that even 'Low Sensitivity' stocks are equities and therefore high risk investors that can lose up to all of their value, and that past performance is no indication of current or future performance.

"Sensitivity" is determined by measuring the "Bear Market Factor" and the "Bad News Factor" against its benchmark.

There are three grades of sensitivity levels:

- Low Sensitivity: The sensitivity indicators fall below the world reference average.
- Moderate Sensitivity: The sensitivity indicators are situated higher than the world reference average, but lower than standard deviation.
- High Sensitivity: The sensitivity indicators are at levels higher than standard deviation.

Volatility 12 M
Volatility measures the magnitude of upwards and downwards movements of a stock or index. The volatility 12 M shows the average volatility over the last 12 months.

% of Stocks in Uptrend
This is the percentage of stocks in a given list that have a positive Medium Term Technical Trend. If, for example, the aggregate of Technology / World, (which is made up of 458 stocks) has 8% "of stocks in Uptrend," it means that 38 of the stocks within that aggregate have a positive Medium Term Technical Trend.

Beta
Beta is often used as a measure of sensitivity. Where a Beta is greater than 100, the stock is more volatile than its reference index.

Correlation
Correlation is the degree of similarity (in %) in which a stock fluctuates in relation to its reference index.

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