

The KOSPI Rally and the Firm Size Effects

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Amid Korea's recent stock market rally, small and mid-cap stock returns seem relatively low in the short run. However, annual corporate earnings of listed companies suggest that mid and large-cap stock returns are at a lower ebb rather than those of small and mid-cap stocks, which appears to highly relate to the trading behavior of institutional investors including foreigners. Also found is that the stock market rally despite the slump in mid and large-cap stocks over the past year has stemmed from an abrupt surge in some mega-cap stocks that hold the great weight in the KOSPI. The growing clout of few mega-cap stocks and institutional investors' trading behavior is expected to create spillover effects in various aspects, which requires a thorough observation and analysis.

The Korean stock market has been rising sharply. The KOSPI hit a six-year high and is hovering around 2,300 points. Amid upbeat news about improved earnings in listed companies, there are mounting expectations that the market will finally get out of the "BOXPI", a nickname for the "boxed-in" KOSPI. On another front, some point out that retail investors mostly holding small and mid-cap stocks are marginalized from the recent rallies driven by large-cap stocks. Indeed, the KOSPI rose nearly 10% while the KOSDAQ failed to climb 1% over the past six months. Against the backdrop, this article carries out an analysis to find out if the recent stock market rally has marginalized small and mid-cap stocks.

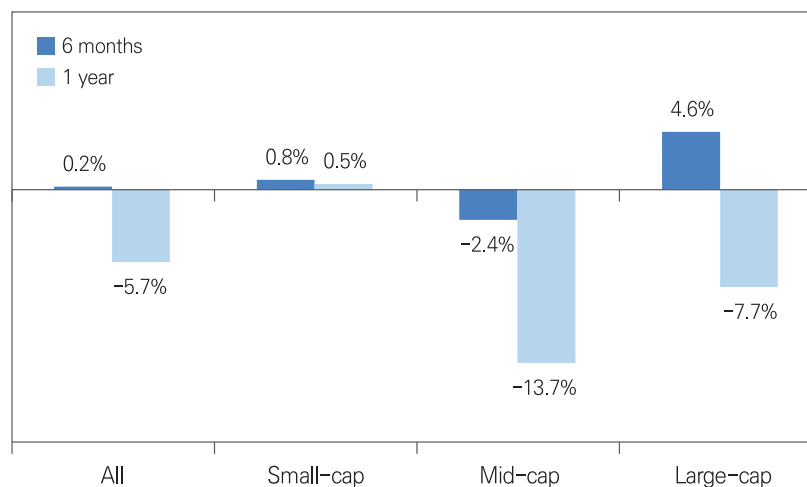
First of all, I looked at how stock returns of listed companies are distributed. According to early-November 2016 market capitalization, I divided KOSPI and KOSDAQ stocks into three

* All opinions expressed in this paper represent the author's personal views and thus should not be interpreted as Korea Capital Market Institute's official position.

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groups; large-cap (the upper 15%), mid-cap (the next 35%), and small-cap (the lower 50%) stocks.¹⁾ In Figure 1, the average cumulative returns over the recent six months between November 2016 and April 2017 recorded 0.8% on small-cap, -2.4% on mid-cap, and 4.6% on large-cap stocks. At least during that period, the exclusion of small and mid-cap stocks seems fairly plausible. However, the result slightly differs when reclassifying listed firms according to early May 2016 market cap and looking at one-year data. Cumulative returns during that period stood at 0.5% on small-cap, -13.7% on mid-cap, and -7.7% on large-cap stocks, showing a significant decrease in mid and large-cap stock returns than small-cap returns. Large-cap stocks had fallen dramatically before climbing recently, whereas mid-cap stocks have been on the persistent decline. In that sense, the stocks excluded from the rally over the past year are mid and large-cap stocks, rather than small-cap stocks.

Figure 1. Stock returns by market cap



Source: DataGuide, author's calculation

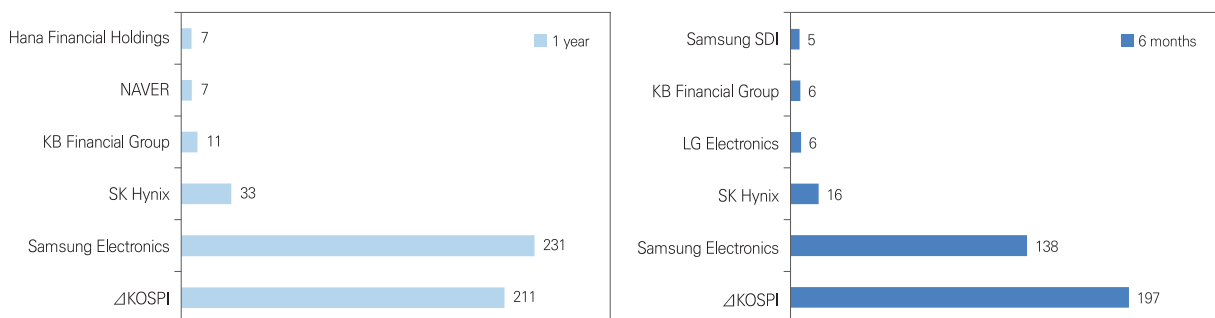
Then, what are the reasons behind the KOSPI rallying over 10% despite mid and large-cap stocks falling significantly over the past year? Or, what made the KOSPI outpace listed stocks in terms of average stock returns over the recent six months? An easily guessable answer to both questions lies in the market cap weighted average method used to compute the index. Because the size of the impact of an individual stock on an index is proportional to the stock's market cap weight, price increases in a small number of stocks that hold the great weight in the market

1) Such market cap classification (15%, 35%, and 50%) is based on the author's choice to effectively disseminate the analysis results.

could push up the index even if other stocks decline. This could be explored by using ‘index contribution’. An individual stock’s index contribution refers to the difference between the index reflecting the stock’s price changes during a certain period and the one assuming no stock price change during the same period. A stock’s high contribution means that the stock pushed up the index by that degree.

Figure 2 demonstrates top five stocks in terms of index contribution over the past year as well as six months. Over the past year, the KOSPI rose by 211 points, with Samsung Electronics’ contribution reaching 231 points. This means that the rise in the KOSPI over the past year is entirely attributable to Samsung Electronics, and that the KOSPI could have fallen by 20 points without the stock’s price changes. Over the past six months, Samsung Electronics’ contribution recorded 138 points out of the KOSPI increase of 197 points. Although the stock’s relative size of contribution fell amid the rally of other large-cap stocks, Samsung Electronics still has an overwhelming influence in the market. Furthermore, the KOSPI’s sensitivity to the price of Samsung Electronics got even higher as the stock’s market weight rose further compared to the previous year.

Figure 2. Top contributors to the KOSPI

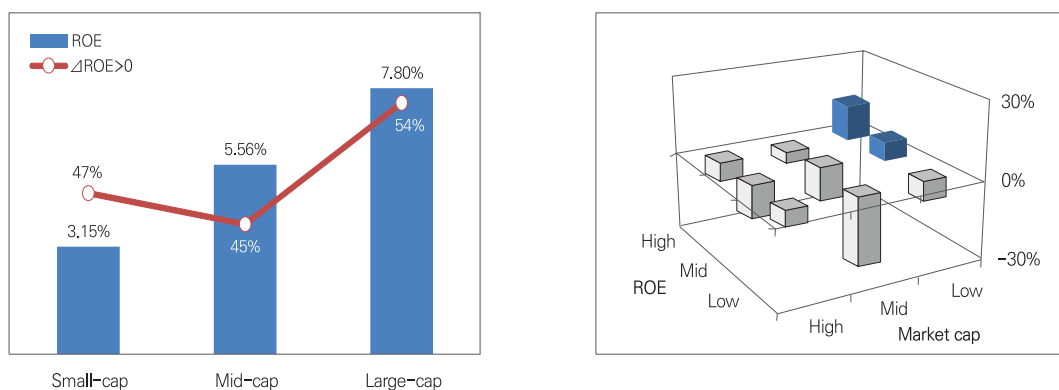


The next question is why mid and large-cap stocks showed lower returns than small-cap stocks over the past year. To answer this, it is worth exploring the earnings factor (earnings of listed companies) and the investor factor (the net buying of institutional investors including foreigners). The analysis period was set between April 2016 and March 2017, given the timing when annual earnings are reflected to stock prices.²⁾ First, I looked at returns on equity (ROE) of listed firms (left of Figure 3) for the earnings factor, and found out that mid and small-cap stocks

2) Listed companies in the financial industry are excluded from the analysis.

showed lower ROE (7.80% in large-cap, 5.56% in mid-cap, and 3.15% in small-cap stocks). In addition, the proportion of firms that saw their ROE improve reached 54% of large-cap stocks, whereas that of mid-cap and small-cap was relatively lower at 45% and 47%, respectively. This confirms mid and large-cap stocks outperforming small-cap stocks. I broke out listed companies into three groups according to ROE, and compared annual stock returns on a total of nine groups of stocks categorized by ROE and market cap (right of Figure 3), which reveals two characteristics. First, stocks with higher ROE showed higher stock returns. However, that correlation remained ambiguous in large-cap stocks. Second, stock returns on mid and large-cap stocks turned negative regardless of the level of ROE.³⁾

Figure 3. Earnings and stock returns



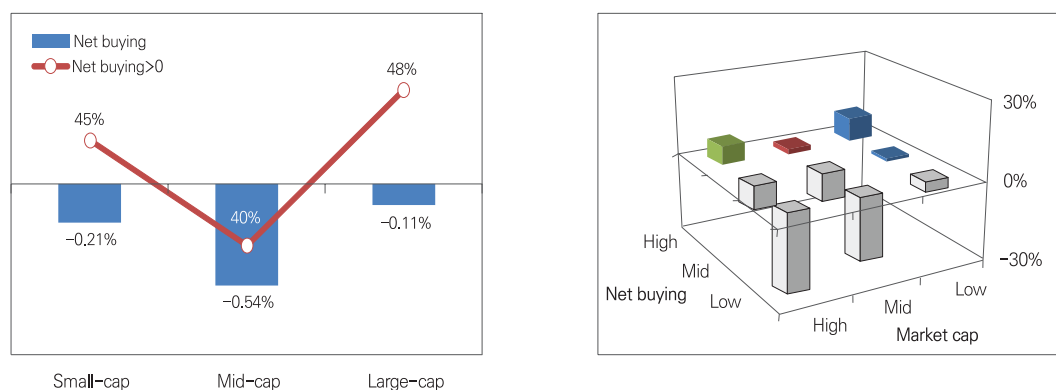
The ratio of cumulative net institutional buying (left of Figure 4)⁴⁾ stood at -0.11%, -0.54%, and -0.21% in large, mid, and small-cap stocks, respectively, showing the largest net selling in mid-cap stocks. Also confirmed was the most frequent net selling in mid-cap stocks, with the share of listed firms with cumulative net buying reaching 48%, 40%, and 45% in large, mid, and small-cap stocks, respectively. I adopted the same logic used earlier and divided listed companies into three groups according to the ratio of net institutional buying, and compared stock returns on a total of nine groups of stocks categorized by that ratio and market cap (right of Figure 4). The result revealed that, regardless of market cap, stocks with higher net institutional buying

3) The analysis results remain qualitatively the same even when using measures other than ROE in the earnings factor (e.g., return on assets, operating income to sales, changes in each measure, etc.).

4) This refers to the cumulative amount of the net institutional buying ratio which divides net institutional buying by the number of shares outstanding. In the end, this is similar to the increase in institutional ownership.

ratios showed higher stock returns, whereas lower returns were found in stocks with lower net institutional buying ratios. That correlation became most evident in large-cap stocks.

Figure 4. Net institutional buying and stock returns



The analysis herein confirms that listed stock earnings are closely correlated to corporate earnings and net institutional buying. The positive correlation among those three variables remains especially evident in mid and small-cap stocks. A slump in mid-cap stock returns vis-à-vis their earnings could have stemmed from a concentration of net institutional selling. In the same vein, large-cap stocks have low returns despite their solid earnings and not-so-large net institutional selling presumably because of the remarkably low returns on stocks with high net institutional selling ratios. A characteristic finding in large-cap stocks is that despite the high correlation of their returns to the net institutional buying ratio, their returns are rarely correlated to corporate earnings. Over the past year, a small number of stocks holding the great weight in the market drove the rally, which seemingly resulted in institutional portfolios trying to increase the weight of those stocks. If other large-cap stocks in those portfolios were net sold during the process, this could have enfeeble the correlation between earnings and stock returns. The remarkably low returns on stocks with the high net institutional selling ratio is a phenomenon that is consistent with that possibility.

Although mid and small-cap stock returns seem somewhat lukewarm in the short run amid the recent rally, mid and large-cap stocks, rather than small and mid-cap stocks, appear to be at a low ebb considering annual corporate earnings. This could be highly related to the trading behavior of institutional investors. Also confirmed is that a small number of large-cap stocks with

high market weight have soared to drive the KOSPI rally despite the overall slowness in mid and large-cap stocks.

A growing influence of a limited number of stocks in the market is an issue worthy of attention. Potential spillovers that could occur in various aspects such as stock market representativeness, diversification effects, risk management efficiency, passive fund performance, trading behavior, and market volatility changes, certainly require a thorough observation and analysis. Also necessary are discussions on the index calculation method and benchmark diversity. Furthermore, the high correlation between net institutional buying and stock returns seems undesirable. If this results from the predictability of stock returns, it means investment losses on retail investors who are institutional investors' trading counterparty. Otherwise, if this inherently stems from institutional investors' herding behavior, this could raise the overpricing or underpricing issue. Regarding this, it is worth recognizing that the impact of few large-scale institutional investors on the market could be as grave as that of mega-cap stocks holding the great market weight.