

S&P GIVI[®] Japan and Major Single Factors Q1 2020 Review

S&P GIVI JAPAN PERFORMANCE

The [S&P GIVI \(Global Intrinsic Value Index\) Japan](#) outperformed its benchmark index, the [S&P Japan BMI](#), by 40 bps in Q1 2020.¹ Since its launch in March 2012, the S&P GIVI Japan has outperformed its benchmark index by 13 bps per year, with a tracking error of 2.44%.

2020 has gotten off to a bad start. The Japanese equity market, as measured by the S&P Japan BMI, declined by 17.96% in Q1 2020, which was the worst-performing quarter since the GFC. Amid the concern over the global economy's outlook when China placed itself on lockdown due to COVID-19 in January, the Japanese market saw a mild decline. After oil prices crashed and the virus threw various countries into chaos in March, the worldwide economic slowdown became real, and Japan had to join the global fight against COVID-19. On March 23, 2020, the [S&P/JPX JGB VIX[®]](#), which measures the 30-day forward volatility of 10-year JGB futures and represents the macroeconomic stability of Japan, rose to an all-time high of 6.81 and closed at 4.77 for Q1. Stressed investors were resorting to extreme behavior amid the uncertain economic outlook and pressure on market liquidity.

In the COVID-19 crisis, sectors appeared to be the main driver of performance, with a large gap between winners and losers—the difference between the best- and worst-performing sectors was 24.74%. On one hand, the sharp decline in consumption demand and shortage of supply heavily hit several cyclical sectors. Energy was the worst performer under the pressure of low demand and the collapse of Saudi-Russia negotiations. Real Estate was severely affected, especially in the hotels and malls segments. On the other hand, traditional defensive sectors, such as Utilities and Consumer Staples, were the best performers. Health Care outperformed, as demand for healthcare products surged this quarter and hopes were on biotech companies producing vaccines/testing tools. Finally, the increase in social distancing boosted the use of internet-based products, which favored Communication Services.

The outperformance of the S&P GIVI Japan was mainly due to the selection effect, especially in Information Technology and Communication Services.

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S&P Dow Jones Indices' Market Attributes[®] series provides market commentary highlighting developments across various asset classes.

¹ The S&P GIVI Japan is a strategy index constructed from the S&P Japan BMI, which serves as its benchmark index. The tracking error between the S&P GIVI Japan and its benchmark represents the difference between the strategy returns and the benchmark returns, reflecting the risk associated with the exposure to certain factors. Tracking error is calculated as the annualized standard deviations of monthly excess returns. It is not possible to invest directly in an index.

| Exhibit 1: S&P GIVI Japan Live Performance and Attributes | | | | | | | |
|---|------------------------|--|--------------------------|---------------|---|--|--------------------------|
| PERFORMANCE AS OF DEC. 31, 2019 | GROSS TOTAL RETURN (%) | | | | RETURN IN EXCESS OF THE S&P JAPAN BMI (%) | | |
| | S&P GIVI JAPAN | S&P INTRINSIC VALUE WEIGHTED JAPAN INDEX | S&P LOW BETA JAPAN INDEX | S&P JAPAN BMI | S&P GIVI JAPAN | S&P INTRINSIC VALUE WEIGHTED JAPAN INDEX | S&P LOW BETA JAPAN INDEX |
| Q1 2020 | -17.56 | -20.16 | -15.68 | -17.96 | 0.40 | -2.20 | 2.29 |
| Q4 2019 | 6.64 | 8.32 | 6.77 | 8.32 | -1.69 | 0.00 | -1.56 |
| 2019 | 11.75 | 15.79 | 14.17 | 18.38 | -6.64 | -2.59 | -4.21 |
| Since March 2012 (Annualized) | 8.88 | 8.03 | 9.63 | 8.75 | 0.13 | -0.72 | 0.88 |
| PERFORMANCE SINCE LAUNCH (ANNUALIZED AGAINST THE S&P JAPAN BMI) | | | | | | | |
| Volatility (%) | 15.48 | 17.36 | 14.98 | 16.63 | - | - | - |
| Return/Volatility | 0.57 | 0.46 | 0.64 | 0.53 | - | - | - |
| Tracking Error (%) | 2.44 | 1.99 | 2.96 | - | - | - | - |
| Alpha (%) | 0.70 | -0.91 | 1.64 | - | - | - | - |
| Beta | 0.92 | 1.04 | 0.89 | - | - | - | - |

Source: S&P Dow Jones Indices LLC. Data from March 31, 2012, to March 31, 2020. Index performance based on total return in JPY. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance. Notes: Tracking error is the annualized standard deviations of monthly excess returns, relative to the primary and secondary benchmarks. Alpha and beta are defined by the regression equation $R_{i,t} = \alpha + \beta \cdot RBMI_{i,t} + \epsilon_t$; where $R_{i,t}$ is the index return series and $RBMI_{i,t}$ is the benchmark index return series.

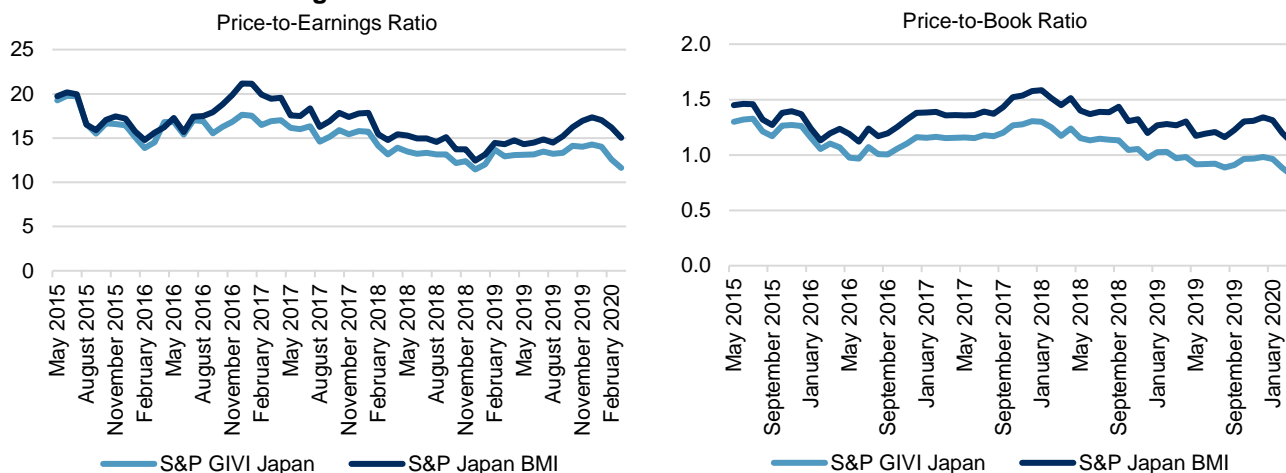
The low beta leg of the S&P GIVI Japan outperformed the benchmark by 2.29% this quarter, while the intrinsic value leg underperformed by 2.20% (see Exhibit 1). Similar to 2019, the performance divergence of the intrinsic value leg and low beta leg of S&P GIVI Japan further widened. The 12-month rolling correlation between the excess return of the two legs dropped from -0.65 in December 2019 to -0.76 in March 2020 (see Exhibit 2). Due to the application of a low beta screen prior to weighting stocks by intrinsic value, the S&P GIVI Japan tended to be more sensitive to the low beta leg. These aspects help to explain why the S&P GIVI Japan outperformed its benchmark in Q1 2020.

The value bias of the S&P GIVI Japan continued in Q1 2020 (see Exhibit 3). The divergence in price-to-earnings ratio between the S&P GIVI Japan and S&P Japan BMI was the same as its historical highest level in January 2017. The difference in price-to-book ratio between the two indices dropped slightly from 2019, but it is still in the historically high range.

Exhibit 2: Rolling 12-Month Correlation between the Intrinsic Value Leg and the Low Beta Leg of the S&P GIVI Japan



Source: S&P Dow Jones Indices LLC. Data as of March 31, 2020. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 3: Price-to-Earnings and Price-to-Book Ratios

Source: S&P Dow Jones Indices LLC. Data as of March 31, 2020. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

Performance of Single Factors in the Japanese Market

We examined the returns of five common single factors in the Japanese equities market that have demonstrated the ability to earn a persistent premium over long periods of time: low volatility, value, quality, momentum, and buyback. The returns of these factors are represented by the performance of our systematic rules-based indices.

- Low Volatility: Represented by the [S&P Japan 500 Low Volatility Index](#).
- Value: Represented by the [S&P Enhanced Value Japan LargeMidCap Index](#).
- Momentum: Represented by the [S&P Momentum Japan LargeMidCap](#).
- Quality: Represented by the [S&P Quality Japan LargeMidCap](#).
- Buyback: Represented by [S&P Japan 500 Buyback Index](#).

In an adverse situation, defensive factors usually outperform by losing less. In Q1 2020, quality and low volatility outperformed the benchmark by 3.8% and 1.31%, respectively. The outperformance of the quality factor suggests that companies with higher profitability, lower leverage, and more cash reserves are more likely to ride through the crisis.

Amid the downward trend in the market, momentum earned a 3.6% excess return, which can be mainly attributed to its overweight and selection effect in the Health Care sector. Value, which allocated heavily to cyclical sectors such as Financials, Industrials, and Consumer Discretionary, was the worst performer this quarter, underperforming the benchmark by 6.05%.

Over the long term, defensive factors remained strong. In terms of absolute return, quality and low volatility were the best-performing factors over the 3-, 5-, and 10-year horizons. While quality outperformed during the recent 3- and 5-year horizons, the low volatility factor provided the best risk-adjusted return over the past 10 years.

| Exhibit 4: Performance of the Five Factors in Japan | | | | | | |
|--|---|---|--|---|--|--------------------------|
| PERIOD | S&P JAPAN 500 LOW VOLATILITY INDEX | S&P ENHANCED VALUE JAPAN LARGEMIDCAP INDEX | S&P QUALITY JAPAN LARGEMIDCAP | S&P MOMENTUM JAPAN LARGEMIDCAP | S&P JAPAN 500 BUYBACK INDEX | S&P JAPAN BMI |
| CUMULATIVE RETURN (%) | | | | | | |
| 1-Month | -4.25 | -12.84 | -4.08 | -6.24 | -6.97 | -6.67 |
| 2-Month | -14.81 | -21.02 | -13.18 | -14.41 | -16.80 | -16.23 |
| 3-Month | -16.65 | -24.01 | -14.16 | -14.36 | -17.82 | -17.96 |
| YTD | -16.65 | -24.01 | -14.16 | -14.36 | -17.82 | -17.96 |
| ANNUAL RETURN (%) | | | | | | |
| 1-Year | -14.71 | -21.50 | 1.27 | -7.21 | -12.06 | -9.91 |
| 3-Year | 1.03 | -4.80 | 4.02 | -0.72 | -3.48 | -0.18 |
| 5-Year | 1.54 | -2.26 | 3.40 | -2.49 | -1.24 | 0.30 |
| 10-Year | 8.10 | 4.28 | 8.74 | 5.40 | 5.77 | 5.98 |
| ANNUAL VOLATILITY (%) | | | | | | |
| 3-Year | 12.47 | 18.03 | 15.02 | 14.52 | 15.22 | 14.84 |
| 5-Year | 12.87 | 21.17 | 16.14 | 15.34 | 16.89 | 16.03 |
| 10-Year | 13.21 | 19.92 | 16.13 | 17.61 | 16.24 | 16.72 |
| ANNUAL RETURN/ANNUAL VOLATILITY | | | | | | |
| 3-Year | 0.08 | -0.27 | 0.27 | -0.05 | -0.23 | -0.01 |
| 5-Year | 0.12 | -0.11 | 0.21 | -0.16 | -0.07 | 0.02 |
| 10-Year | 0.61 | 0.21 | 0.54 | 0.31 | 0.36 | 0.36 |
| 12-MONTH MAXIMUM DRAWDOWN (%) | | | | | | |
| 10-Year | -16.65 | -33.08 | -19.22 | -22.96 | -22.06 | -22.70 |

Source: S&P Dow Jones Indices LLC. Data from March 31, 2010, to March 31, 2020. Index performance based on total return in JPY. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

APPENDIX

Exhibit 5: Performance of Smart Beta Indices and Benchmarks in Japan

| PERIOD | SMART BETA INDICES IN JAPAN | | | | BENCHMARKS IN JAPAN | | | | | |
|--|-----------------------------|-----------------------|---------------------------------|-------------------------------------|----------------------|------------------|------------|--------|----------------|---------------|
| | S&P GIVI JAPAN | FTSE RAFI JAPAN INDEX | MSCI JAPAN VALUE WEIGHTED INDEX | MSCI JAPAN MINIMUM VOLATILITY INDEX | JPX-NIKKEI INDEX 400 | MSCI JAPAN INDEX | NIKKEI 225 | TOPIX | MSCI JAPAN IMI | S&P JAPAN BMI |
| CUMULATIVE RETURNS (%) | | | | | | | | | | |
| 1-Month | -6.62 | -9.31 | -10.06 | -3.20 | -6.34 | -6.90 | -9.69 | -5.99 | -6.77 | -6.67 |
| 2-Month | -16.00 | -18.08 | -18.47 | -12.80 | -15.67 | -15.82 | -17.66 | -15.65 | -16.13 | -16.23 |
| 3-Month | -17.56 | -19.99 | -20.45 | -13.57 | -17.22 | -17.18 | -19.23 | -17.45 | -17.78 | -17.96 |
| YTD | -17.56 | -19.99 | -20.45 | -13.57 | -17.22 | -17.18 | -19.23 | -17.45 | -17.78 | -17.96 |
| ANNUAL RETURN (%) | | | | | | | | | | |
| 1-Year | -12.57 | -14.26 | -14.28 | -8.74 | -8.96 | -8.62 | -8.78 | -9.50 | -9.38 | -9.91 |
| 3-Year | -1.53 | -2.67 | -2.66 | 1.26 | -0.03 | 0.26 | 2.11 | -0.14 | -0.01 | -0.18 |
| 5-Year | -0.10 | -0.84 | -1.24 | 1.54 | 0.11 | 0.05 | 1.72 | 0.37 | 0.34 | 0.30 |
| 10-Year | 6.56 | 4.95 | 5.13 | 7.35 | - | 5.63 | 7.54 | 5.96 | 5.97 | 5.98 |
| ANNUAL VOLATILITY (%) | | | | | | | | | | |
| 3-Year | 13.49 | 15.62 | 15.69 | 11.32 | 14.75 | 14.63 | 16.20 | 14.83 | 14.75 | 14.84 |
| 5-Year | 14.74 | 17.83 | 18.06 | 12.20 | 16.12 | 16.27 | 17.09 | 16.19 | 16.02 | 16.03 |
| 10-Year | 15.38 | 18.22 | 18.24 | 13.22 | - | 17.10 | 17.61 | 16.84 | 16.76 | 16.72 |
| ANNUAL RETURN/ANNUAL VOLATILITY | | | | | | | | | | |
| 3-Year | -0.11 | -0.17 | -0.17 | 0.11 | 0.00 | 0.02 | 0.13 | -0.01 | 0.00 | -0.01 |
| 5-Year | -0.01 | -0.05 | -0.07 | 0.13 | 0.01 | 0.00 | 0.10 | 0.02 | 0.02 | 0.02 |
| 10-Year | 0.43 | 0.27 | 0.28 | 0.56 | - | 0.33 | 0.43 | 0.35 | 0.36 | 0.36 |
| 12-MONTH MAXIMUM DRAWDOWN (%) | | | | | | | | | | |
| 10-Year | -21.01 | -27.84 | -29.06 | -14.40 | -23.22* | -24.71 | -22.90 | -23.34 | -22.96 | -22.70 |

*12-Month Maximum Drawdown for JPX-NIKKEI Index 400 based on data from Jan. 31, 2014, to March 31, 2020.

Source: S&P Dow Jones Indices LLC, FactSet. Data from March 31, 2010, to March 31, 2020. Index performance based on total return in JPY. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

PERFORMANCE DISCLOSURE

The S&P GIVI Japan was launched March 19, 2012. The S&P Intrinsic Value Weighted Japan Index and S&P Low Beta Japan Index were launched May 8, 2014. The S&P Japan 500 Low Volatility Index was launched June 8, 2015. The S&P Enhanced Value Japan LargeMidCap Index was launched April 27, 2015. The S&P Quality Japan LargeMidCap was launched June 8, 2014. The S&P Momentum Japan LargeMidCap was launched November 18, 2014. The S&P Japan 500 Buyback Index was launched October 17, 2014. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Complete index methodology details are available at www.spdji.com. Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its datafeed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.spdji.com for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

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