Why Does the S&P 500® Matter to Brazil?

The S&P 500 is a renowned benchmark for large-cap U.S. equities. The index is designed to measure 500 leading companies and captures approximately 80% coverage of investable market capitalization in the U.S. equity market. As of year-end 2017, over USD 9.9 trillion was benchmarked to the S&P 500 alone, with indexed assets making up USD 3.4 trillion of this total. Exchange-traded products based on the S&P 500 have been cross-listed in various markets across the globe, but what creates the international appetite for U.S. equities, especially the S&P 500?

In this paper, we will:

- Compare the S&P 500 to the leading equity benchmark in Brazil;
- Explore the significance of the S&P 500 in the global equity market; and
- Compare S&P 500 performance to that of active U.S. large-cap funds.

COMPARISON OF THE S&P 500 AND THE IBOVESPA

The S&P 500 and the Bovespa Index (Ibovespa) are widely regarded as primary performance indicators for the U.S. and Brazilian equity markets, respectively. Both indices have been commonly used as benchmarks for investment in domestic stocks or equity funds. However, the indices vary significantly due to the different economic landscapes and financial market developments they reflect.

The S&P 500 comprises 500 companies and represents around 80% of the market cap of the U.S. equity market, while the Ibovespa measures the performance of the more actively traded and more representative stocks of the Brazilian equity market, covering approximately 85% total value traded on the B3 in the preceding 12-month period. Both are free-float, market-cap-weighted indices, but the S&P 500 has much greater stock diversification than the Ibovespa.

Compared with the Ibovespa, the S&P 500 is much more diverse in terms of the weight of constituents held in the index. The 10 largest S&P 500 members represent only 21.2% of the index, and the largest component, Apple, has a weight of just 3.9%. In contrast, the 10 largest stocks in the

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1 Each year, S&P Dow Jones Indices conducts a survey to estimate the total assets directly linked to its indices. For the latest report, please see the “S&P DJI Annual Survey of Indexed Assets 2017.”
Ibovespa dominate 54.1% of the index, and the largest two members, Vale S.A. and Itau Unibanco Holding SA Pfd, carry stock weights as high as 13.0% and 10.2%, respectively (see Exhibit 1).

<table>
<thead>
<tr>
<th>S&amp;P 500 STOCKS</th>
<th>WEIGHT (%)</th>
<th>IBOVESPA STOCKS</th>
<th>WEIGHT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple Inc.</td>
<td>3.9</td>
<td>Vale S.A.</td>
<td>13.0</td>
</tr>
<tr>
<td>Microsoft Corp</td>
<td>3.3</td>
<td>Itau Unibanco Holding SA Pfd</td>
<td>10.2</td>
</tr>
<tr>
<td>Amazon.com Inc</td>
<td>3.0</td>
<td>Petroleo Brasileiro SA</td>
<td>3.7</td>
</tr>
<tr>
<td>Facebook Inc A</td>
<td>2.0</td>
<td>Banco Bradesco SA Pfd</td>
<td>7.2</td>
</tr>
<tr>
<td>Berkshire Hathaway B</td>
<td>1.6</td>
<td>Ambev SA</td>
<td>6.4</td>
</tr>
<tr>
<td>JP Morgan Chase &amp; Co</td>
<td>1.5</td>
<td>B3 SA - Brasil, Bolsa, Balcao</td>
<td>3.5</td>
</tr>
<tr>
<td>Exxom Mobil Corp</td>
<td>1.5</td>
<td>Itausa - Investimentos Itau SA Pfd</td>
<td>3.4</td>
</tr>
<tr>
<td>Alphabet Inc C</td>
<td>1.5</td>
<td>Banco do Brasil S.A.</td>
<td>2.9</td>
</tr>
<tr>
<td>Alphabet Inc A</td>
<td>1.5</td>
<td>Ultrapar Participacoes S.A.</td>
<td>2.1</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>1.4</td>
<td>Suzano Papel e Celulose SA</td>
<td>1.7</td>
</tr>
</tbody>
</table>

**Total Weight of Top 10 Companies**: 21.20

**Total Weight of Top 10 Companies**: 54.1

Source: S&P Dow Jones Indices LLC, B3. Data as of June 29, 2018. Table is provided for illustrative purposes.

Although the S&P 500 and Ibovespa capture the largest and most-liquid stocks from their respective markets, the S&P 500 has significantly higher investment capacity and tradability. Constituents of the S&P 500 have a combined float-adjusted market cap and average daily traded value of approximately USD 23 trillion and USD 171 billion, respectively, whereas constituents of the Ibovespa have a total market cap and average daily traded value of just USD 320 billion and USD 2.7 billion, respectively.

**Exhibit 2: S&P 500 and Ibovespa Size and Liquidity Statistics**

<table>
<thead>
<tr>
<th>INDEX</th>
<th>CONSTITUENT FLOAT-ADJUSTED MARKET CAP (USD BILLION)</th>
<th>CONSTITUENT 3-MONTH AVERAGE DAILY TRADED VALUE (USD MILLION)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S&amp;P 500</td>
<td>IBOVESPA</td>
</tr>
<tr>
<td>Mean</td>
<td>45.6</td>
<td>5.0</td>
</tr>
<tr>
<td>Median</td>
<td>20.2</td>
<td>2.5</td>
</tr>
<tr>
<td>Largest</td>
<td>909.8</td>
<td>45.0</td>
</tr>
<tr>
<td>Sum of Constituents</td>
<td>23,036</td>
<td>320</td>
</tr>
</tbody>
</table>

Source: S&P Dow Jones Indices LLC, B3. Data as of June 29, 2018. Market cap is calculated as the share price multiplied by the number of shares at the security level. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Furthermore, although the S&P 500 and the Ibovespa are diversified across sectors, their sector compositions are significantly different. The Ibovespa is highly concentrated in the financials sector, which dominates 33.8% of the index. Materials is the second-largest sector, with a weight of 17.6%. In contrast, the S&P 500 is highly diversified among sectors, with information technology being the most prominent sector, accounting for...
The S&P 500 has higher weighting in the information technology and health care sectors compared with the Ibovespa.

26.0% of the index. Financials and health care are the next two largest sectors, representing 13.8% and 14.1% of the S&P 500, respectively.

The S&P 500 has significantly higher weighting in the information technology and health care sectors compared with the Ibovespa. The biggest companies in the information technology sector, such as Apple, Microsoft, and Google, are global leaders in the tech hardware, software, and internet services industries. These companies represent more than 39% of the S&P 500’s information technology sector and about 24% of the S&P Global BMI’s information technology sector. In the health care sector of the S&P 500, the three largest companies are Johnson & Johnson, Pfizer, and Unitedhealth Group Inc, which are worldwide providers of pharmaceutical products. These companies make up more than 22% of the S&P 500’s health care sector and about 13% of the S&P Global BMI’s health care sector.

Exhibit 3: Sector Weighting of the S&P 500 Versus the Ibovespa

Source: S&P Dow Jones Indices LLC, B3. Data as of June 29, 2018. Chart is provided for illustrative purposes.

Apart from their different sector compositions, the S&P 500 and the Ibovespa have also been affected by different economic factors in the past. The Ibovespa is designed to measure the performance of equities in Brazil, the largest national economy in Latin America and the world’s ninth-largest economy, accounting for 2.55% of world GDP, while the S&P 500 seeks to track the equity market performance of the world’s largest economy, the U.S., which accounts for 24.03% of the global economy.²

Foreign sales have consistently contributed to more than 40% of S&P 500 revenue in the past decade.

² Based on 2017 GDP (current prices) figures sourced from International Monetary Fund, World Economic Outlook Database, April 2018.
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from outside of the U.S., with 8.33% from the Asia Pacific region, 8.14% from Europe, and 3.90% from Africa\(^3\) (see Exhibit 4). The diverse geographical revenue sources can translate into high international diversification benefits for the S&P 500.

Exhibit 4: S&P 500 Foreign Sales by Region

The diverse geographical revenue sources can translate into high international diversification benefits for the S&P 500.

The S&P 500 generated more than 19.0% of corporate revenue and 25.5% of corporate earnings for the S&P Global BMI.

SIGNIFICANCE OF THE S&P 500 IN THE GLOBAL EQUITY MARKET

Because many stocks in the S&P 500 are leading global companies, they represent a significant part of global equity market capitalization, revenue, and earnings. Companies in the S&P 500 represent 42.85% of the total market cap of the S&P Global BMI. Among the 100 largest stocks in the S&P Global BMI, 65 of them are S&P 500 members. In 2017, the S&P 500 generated more than 18.97% of corporate revenue and 25.5% of corporate earnings for the S&P Global BMI. We have also observed that in most sectors, S&P 500 companies have delivered higher operating margins than their global sector peers, especially in the information technology sector, with a spread of 13.89%.

\(^3\) For further details, please see "S&P 500 2017: Global Sales."
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Exhibit 5: Operating Margin of S&P 500 Sectors

S&P 500 companies have delivered higher operating margins than their global sector peers in most sectors.

Source: S&P Dow Jones Indices LLC, Factset. Data as of June 29, 2018. Figures based on company-reported operating income and revenue in the trailing 12-month period. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

As many S&P 500 members are global industry leaders and produce in large quantities, they usually have higher negotiation power with suppliers, which can lower their operating costs. Furthermore, the brand power of these companies helps them to sell their products at premium prices and maintain higher margins.4 Based on the Best Global Brand 2017 report published by the worldwide brand consultant Interbrand, 48 of the top 100 global brands are members or are owned by members of the S&P 500.5 These brands scored well in terms of the valuation-based competitive strength of the brand, the role the brand plays in purchase decisions, and the financial performance of the branded products or services. Apple, Google, Microsoft, Coca-Cola, Amazon, Facebook, and IBM ranked among the top 10 global brands.

4 For more details, please see the article "America’s Most Profitable Products" by Thomas C. Frohlich and Alexander E.M. Hess.

5 For methodology and complete list of the 100 best global brands, please see http://interbrand.com/best-brands/best-global-brands/2017/ranking/.
Investing in the U.S. equity market can be done via the use of active fund managers or index-linked products, which track the returns of an underlying index.

PERFORMANCE OF THE S&P 500 VERSUS ACTIVE U.S. LARGE-CAP FUNDS

Investing in the U.S. equity market can be done via the use of active fund managers or index-linked products, which track the returns of an underlying index. Twice a year, S&P Dow Jones Indices releases the SPIVA® Scorecard, which reports the number of actively managed mutual funds that beat their comparable benchmarks over different timeframes.⁶

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⁶ To explore how active managers in the U.S. and around the world have performed relative to their benchmarks, click here.
The SPVA U.S. Year-End 2017 Scorecard showed that the S&P 500 outperformed more than 63.08% of active U.S. large-cap funds in 2017. Performance of active U.S. large-cap funds looks more unfavorable for longer investment periods, as 84.23% and 89.51% of them underperformed the S&P 500 over the 5- and 10-year periods, respectively. The returns of the S&P 500 also exceeded the average returns of active U.S. large-cap funds on both an equal- and asset-weighted basis. This indicates that index-based investing may be a viable complement to or substitute for actively managed investments in the U.S. equity market.

<table>
<thead>
<tr>
<th>INDEX/FUND CATEGORY</th>
<th>1-YEAR (%)</th>
<th>3-YEAR (%)</th>
<th>5-YEAR (%)</th>
<th>10-YEAR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;P 500</td>
<td>21.83</td>
<td>11.41</td>
<td>15.79</td>
<td>8.50</td>
</tr>
<tr>
<td>Active U.S. Large-Cap Funds (Equal-Weighted Average)</td>
<td>20.69</td>
<td>9.38</td>
<td>13.66</td>
<td>6.83</td>
</tr>
<tr>
<td>Active U.S. Large-Cap Funds (Asset-Weighted Average)</td>
<td>22.77</td>
<td>10.85</td>
<td>14.89</td>
<td>7.43</td>
</tr>
<tr>
<td>% of Active U.S. Large-Cap Funds Outperformed by S&amp;P 500</td>
<td>63.08</td>
<td>80.56</td>
<td>84.23</td>
<td>89.51</td>
</tr>
</tbody>
</table>

Source: S&P Dow Jones Indices LLC. Data as of December 2017, as reported in the SPIVA U.S. Year-End 2017 Scorecard. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

CONCLUSION

The S&P 500 and the Ibovespa are considered primary indicators of overall market performance in the U.S. and Brazilian equity markets, respectively. Both indices comprise the largest and most-liquid stocks from their respective markets, but the S&P 500 has much greater stock diversification and its members are significantly more liquid compared with those of the headline Brazilian index.

Despite the fact that both the S&P 500 and the Ibovespa are diversified across sectors, their sector compositions are significantly different. More than one-half of the Ibovespa’s weight is dominated by the financials and materials sectors, whereas the S&P 500 has the highest concentration in the information technology, health care, and consumer discretionary sectors.

While the Ibovespa seeks to track the performance of equities in Brazil, the world’s ninth-largest economy, the S&P 500 is designed to measure the equity market performance of the world’s largest economy, the U.S. Foreign sales have consistently contributed to more than 40% of S&P 500 revenue in the past decade, with this high and diverse international revenue exposure translating into significant international diversification benefits for the S&P 500.

The members of the S&P 500 are not only the largest companies in the U.S., but many of them are leading global companies that represent a significant share of global equity market capitalization, revenue, and
earnings. These companies delivered higher operating margins than their global peers in most sectors, and almost one-half of the top brands across the globe are members or are owned by members of the S&P 500.

Additionally, the SPIVA U.S. Scorecard shows that the majority of active U.S. large-cap funds were outperformed by the S&P 500 over 1-, 3-, 5-, and 10-year periods, indicating that index-based investing may be a viable complement to or substitute for actively managed investments in the U.S. equity market.

All of these factors drive the international appetite for the S&P 500, and as a result, there has been an increasing number of S&P 500 index-based products in various markets across the globe.
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