A Division of S&P Global

Latin America Persistence Scorecard

Contributors

Joseph Nelesen, PhD
Head of Specialists
Index Investment Strategy
joseph.nelesen@spglobal.com

Davide Di Gioia Head of SPIVA Index Investment Strategy davide.di.gioia@spglobal.com

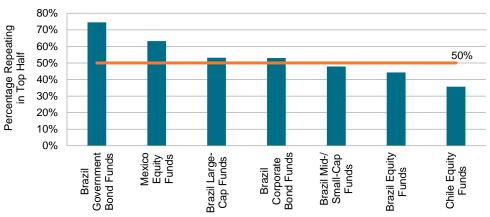
Sabatino Longo
Quantitative Analyst
Index Investment Strategy
sabatino.longo@spglobal.com

Summary

Can investment results be attributed to skill or luck? Genuine skill is more likely to persist, while luck is random and fleeting. Thus, one measure of skill is the consistency of a fund's performance relative to its peers. The Persistence Scorecard measures that consistency and shows that, regardless of asset class or style focus, active management outperformance tends to be relatively short lived, with few funds consistently outranking their peers.

Among a total of 201 funds in our seven reported regional fund categories across Brazil, Chile and Mexico whose performance placed them in the top quartile for the 12-month period ending December 2019, only four funds (2%) managed to remain in the top quartile for each of the next four years (see Report 2). Exhibit 1 illustrates that in three out of seven categories, less than 50% of funds were able to repeat their top-half status over two consecutive five-year periods (see Report 6).

Exhibit 1: Percentage of Funds Repeating in Top Half over Two Consecutive Five-Year Periods



Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Chart is provided for illustrative purposes. Past performance is no guarantee of future results.

Report Highlights

Brazil

- Most of Brazil's top-performing equity fund managers did not maintain their outperformance in subsequent years. Among equity funds ranked in the top quartile for the 12-month period ending December 2019, one remained consistently in the top quartile over the subsequent four one-year periods (see Report 2). Active fund outperformance in 2021 did not predict outperformance in the two subsequent years (see Report 1b).
- The Brazil Government Bond funds category showed similar erosion of outperformance, with precisely zero top-quartile managers as of December 2019 managing to remain in the top quartile for the subsequent four 12-month periods (see Report 2).
- Brazil Corporate Bond funds fared slightly better, with 9.1% of managers maintaining consistent top-quartile performance for five years in a row, and 33.3% remaining in the top quartile for two consecutive five-year periods (see Reports 2 and 5).

Chile

- The rarity of persistence by equity managers was equally visible in Chile, with only one out of eleven (9.1%) of the top-quartile funds in the first 12-month period repeating its outperformance for the subsequent four years (see Report 2).
- Report 3 shows that 33.3% of the top-quartile funds in the first period of the three-year transition matrix remained in the top quartile at the end of the second period.
- Among funds ranked in the top half for the three years ending December 2020, the majority (55.6%) either fell to the bottom half, were merged or were liquidated over the subsequent three-year period (see Report 4).

Mexico

- Similar to the other regions, top-quartile managers in Mexico had difficulty replicating their rank in subsequent years. After one year, 36.4% of Mexico Equity funds remained in the top quartile, yet after four years, none remained (see Report 2).
- The five-year transition matrix shows that 40% of top-quartile funds subsequently dropped to quartile three or four over the five-year period, or were merged or liquidated, while another 40% remained in the top quartile (see Report 5).
- Consistent with data from the <u>SPIVA® Latin America Year-End 2023 Scorecard</u>, Mexico had a higher fund survival rate than Brazil and Chile across all periods measured. Reports 3, 4, 5 and 6 show that, on average, Mexican funds were less likely to be shut down than Brazilian and Chilean funds.

About the Persistence Scorecard

The phrase "past performance is no guarantee of future results" (or some variation thereof) can be found in the fine print of most mutual fund literature. Yet, due to either force of habit or conviction, investors and advisors consider past performance and related metrics to be important factors in fund selection. So, does past performance really matter?

To answer this question, the semiannual S&P Persistence Scorecard tracks the degree to which historical relative performance is predictive of future relative performance. For a more detailed description of the Persistence Scorecard's allocation of funds to appropriate categories, and how funds are screened and selected for inclusion, please see the corresponding SPIVA Latin America Year-End 2023 Scorecard.¹

Key features of the S&P Persistence Scorecard include:

- Historical rankings without survivorship bias: For anyone making an investment decision, all funds available at the time of that decision are part of the initial opportunity set. Ignoring funds that liquidate or merge during a period of study biases measurements of persistence.
- Clean universe: The mutual fund universe used in these reports comprises actively
 managed funds in Brazil, Mexico and Chile. Index, leveraged and inverse funds, along
 with other index-linked products are excluded from the sample. To avoid double
 counting of multiple share classes, only the share class with the highest previous period
 return of each fund is used.
- Transition matrices: Transition matrices show the movements between quartiles and halves over non-overlapping three- and five-year periods. They also track the percentage of funds that have merged or liquidated.
- Tracking reports of top performers: The tracking reports show the percentage of funds that remain in the top-quartile or top-half rankings over consecutive three- and five-year periods.

¹ The latest and historical SPIVA Scorecards for each region can be found at https://www.spglobal.com/spdji/en/research-insights/spiva/

25.00

28.57

37.84

40.91

23.81

Brazil Mid-/Small-Cap Funds

Brazil Corporate Bond Funds

Brazil Government Bond

Chile Equity Funds

Mexico Equity Funds

Funds

Reports

Report 1: Performance Persistence of Funds over Three Consecutive 12-Month Periods

| Fund Catagory | Fund Count at Start | Percentage Remaining in Top Quartile | | |
|---------------------------------|---------------------|--------------------------------------|---------------|--|
| Fund Category | (December 2021) | December 2022 | December 2023 | |
| Top Quartile | | | | |
| Brazil Equity Funds | 65 | 41.54 | 20.00 | |
| Brazil Large-Cap Funds | 32 | 43.75 | 12.50 | |
| Brazil Mid-/Small-Cap Funds | 24 | 41.67 | 8.33 | |
| Brazil Corporate Bond Funds | 25 | 36.00 | 12.00 | |
| Brazil Government Bond Funds | 74 | 75.68 | 5.41 | |
| Chile Equity Funds | 11 | 45.45 | 9.09 | |
| Mexico Equity Funds | 11 | 18.18 | 0.00 | |
| Fund Catagony | Fund Count at Start | Percentage Remaining in Top Half | | |
| Fund Category | (December 2021) | December 2022 | December 2023 | |
| Top Half | | | | |
| Brazil Equity Funds | 130 | 60.77 | 33.08 | |
| Brazil Large-Cap Funds | 64 | 67.19 | 45.31 | |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

62.50

61.22

73.65

50.00

33.33

Report 1b: Alpha Persistence of Funds over Three Consecutive 12-Month Periods

48

49

148

22

| Fund Category Benchmark | | Total Fund Count | Funds Outperforming the Benchmark (December 2020) | | Percentage Continuing to Outperform the Benchmark (%) | |
|---------------------------------|-------------------------------------|------------------------|---|----------------|---|---------------|
| | C | | Count | Percentage (%) | December 2021 | December 2022 |
| Brazil Equity Funds | S&P Brazil BMI | 270 | 115 | 42.59 | 56.52 | 20.87 |
| Brazil Large-Cap Funds | S&P Brazil LargeCap | 132 | 95 | 71.97 | 26.32 | 4.21 |
| Brazil Mid-/Small- Cap Funds | S&P Brazil MidSmallCap | 103 | 37 | 35.92 | 62.16 | 13.51 |
| Brazil Corporate Bond Funds | Anbima Debentures Index (IDA) | 109 | 53 | 48.62 | 81.13 | 60.38 |
| Brazil Government Bond Funds | Anbima Market Index (IMA) | 316 | 210 | 66.46 | 75.24 | 1.90 |
| Chile Equity Funds | S&P Chile BMI | 45 | 26 | 57.78 | 53.85 | 50.00 |
| Mexico Equity Funds | S&P/BMV IRT | 43 | 5 | 11.63 | 100.00 | 0.00 |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 2: Performance Persistence of Funds over Five Consecutive 12-Month Periods

| Fund Category | Fund Count at Start | Percentage Remaining in Top Quartile | | | |
|------------------------------|---------------------|--------------------------------------|------------------|------------------|------------------|
| | (December 2019) | December 2020 | December 2021 | December 2022 | December 2023 |
| Top Quartile | | | | | |
| Brazil Equity Funds | 49 | 42.86 | 12.24 | 2.04 | 2.04 |
| Brazil Large-Cap Funds | 24 | 16.67 | 0.00 | 0.00 | 0.00 |
| Brazil Mid-/Small-Cap Funds | 16 | 25.00 | 18.75 | 12.50 | 0.00 |
| Brazil Corporate Bond Funds | 22 | 54.55 | 31.82 | 13.64 | 9.09 |
| Brazil Government Bond Funds | 68 | 60.29 | 7.35 | 0.00 | 0.00 |
| Chile Equity Funds | 11 | 54.55 | 36.36 | 9.09 | 9.09 |
| Mexico Equity Funds | 11 | 36.36 | 18.18 | 0.00 | 0.00 |

| | Fund Count at Start | Percentage Remaining in Top Half | | | |
|------------------------------|---------------------|----------------------------------|------------------|------------------|------------------|
| Fund Category | (December 2019) | December 2020 | December 2021 | December 2022 | December 2023 |
| Top Half | | | | | |
| Brazil Equity Funds | 97 | 55.67 | 26.80 | 11.34 | 8.25 |
| Brazil Large-Cap Funds | 47 | 36.17 | 10.64 | 8.51 | 8.51 |
| Brazil Mid-/Small-Cap Funds | 31 | 41.94 | 16.13 | 16.13 | 3.23 |
| Brazil Corporate Bond Funds | 43 | 69.77 | 41.86 | 27.91 | 20.93 |
| Brazil Government Bond Funds | 135 | 82.96 | 21.48 | 8.89 | 7.41 |
| Chile Equity Funds | 22 | 50.00 | 45.45 | 22.73 | 18.18 |
| Mexico Equity Funds | 21 | 66.67 | 42.86 | 9.52 | 4.76 |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 3: Three-Year Transition Matrix – Performance over Two Non-Overlapping Three-Year Periods (Based on Quartiles)

| | Fund Count at Start | Three-Year Percentages at End (December 2020-December 2023) | | | | | |
|----------------------|-----------------------------------|---|---------------------|---------------------|---------------------|------------------------------|--|
| Quartile | (December 2017- December 2020) | 1st Quartile (%) | 2nd Quartile (%) | 3rd Quartile (%) | 4th Quartile (%) | Merged/ Liquidated (%) | |
| Brazil Equity | Funds | | | | | | |
| 1st Quartile | 45 | 20.00 | 11.11 | 26.67 | 35.56 | 6.67 | |
| 2nd Quartile | 44 | 29.55 | 27.27 | 15.91 | 15.91 | 11.36 | |
| 3rd Quartile | 45 | 20.00 | 26.67 | 28.89 | 8.89 | 15.56 | |
| 4th Quartile | 45 | 17.78 | 20.00 | 15.56 | 26.67 | 20.00 | |
| Brazil Large-0 | Cap Funds | | | | | | |
| 1st Quartile | 19 | 47.37 | 15.79 | 5.26 | 21.05 | 10.53 | |
| 2nd Quartile | 19 | 31.58 | 10.53 | 26.32 | 15.79 | 15.79 | |
| 3rd Quartile | 19 | 0.00 | 31.58 | 21.05 | 31.58 | 15.79 | |
| 4th Quartile | 20 | 10.00 | 25.00 | 30.00 | 20.00 | 15.00 | |
| Brazil Mid-/Sr | mall-Cap Funds | | | | | | |
| 1st Quartile | 12 | 33.33 | 16.67 | 8.33 | 25.00 | 16.67 | |
| 2nd Quartile | 12 | 25.00 | 33.33 | 25.00 | 16.67 | 0.00 | |
| 3rd Quartile | 12 | 8.33 | 8.33 | 41.67 | 33.33 | 8.33 | |
| 4th Quartile | 13 | 23.08 | 23.08 | 7.69 | 15.38 | 30.77 | |
| Brazil Corpor | ate Bond Funds | | | | | | |
| 1st Quartile | 16 | 25.00 | 0.00 | 12.50 | 37.50 | 25.00 | |
| 2nd Quartile | 16 | 31.25 | 18.75 | 12.50 | 6.25 | 31.25 | |
| 3rd Quartile | 16 | 6.25 | 18.75 | 50.00 | 12.50 | 12.50 | |
| 4th Quartile | 16 | 18.75 | 37.50 | 6.25 | 25.00 | 12.50 | |
| Brazil Govern | ment Bond Funds | | | | | | |
| 1st Quartile | 59 | 3.39 | 10.17 | 20.34 | 62.71 | 3.39 | |
| 2nd Quartile | 58 | 29.31 | 20.69 | 31.03 | 13.79 | 5.17 | |
| 3rd Quartile | 59 | 54.24 | 27.12 | 5.08 | 5.08 | 8.47 | |
| 4th Quartile | 59 | 3.39 | 32.20 | 33.90 | 8.47 | 22.03 | |
| Chile Equity I | Funds | | | | | | |
| 1st Quartile | 9 | 33.33 | 33.33 | 22.22 | 0.00 | 11.11 | |
| 2nd Quartile | 9 | 11.11 | 11.11 | 44.44 | 11.11 | 22.22 | |
| 3rd Quartile | 9 | 22.22 | 22.22 | 0.00 | 44.44 | 11.11 | |
| 4th Quartile | 9 | 11.11 | 11.11 | 11.11 | 22.22 | 44.44 | |
| Mexico Equit | y Funds | | | | | | |
| 1st Quartile | 10 | 50.00 | 40.00 | 10.00 | 0.00 | 0.00 | |
| 2nd Quartile | 9 | 11.11 | 22.22 | 66.67 | 0.00 | 0.00 | |
| 3rd Quartile | 10 | 20.00 | 20.00 | 30.00 | 30.00 | 0.00 | |
| 4th Quartile | 10 | 20.00 | 10.00 | 0.00 | 70.00 | 0.00 | |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 4: Three-Year Transition Matrix – Performance over Two Non-Overlapping Three-

Year Periods (Based on Halves)

| Half | Fund Count at Start (December 2017-2020) | Three Year Percentage at End (December 2020-December 2023) | | | |
|----------------------------|---|--|-----------------|-----------------------|--|
| Half | | Top Half (%) | Bottom Half (%) | Merged/Liquidated (%) | |
| Brazil Equity Funds | | | | | |
| Top Half | 89 | 43.82 | 47.19 | 8.99 | |
| Bottom Half | 90 | 42.22 | 40.00 | 17.78 | |
| Brazil Large-Cap Fund | ds | | | | |
| Top Half | 38 | 52.63 | 34.21 | 13.16 | |
| Bottom Half | 39 | 33.33 | 51.28 | 15.38 | |
| Brazil Mid-/Small-Cap | Funds | | | | |
| Top Half | 24 | 54.17 | 37.50 | 8.33 | |
| Bottom Half | 25 | 32.00 | 48.00 | 20.00 | |
| Brazil Corporate Bond | d Funds | | | | |
| Top Half | 32 | 37.50 | 34.38 | 28.13 | |
| Bottom Half | 32 | 40.63 | 46.88 | 12.50 | |
| Brazil Government Bo | ond Funds | | | | |
| Top Half | 117 | 31.62 | 64.10 | 4.27 | |
| Bottom Half | 118 | 58.47 | 26.27 | 15.25 | |
| Chile Equity Funds | | | | | |
| Top Half | 18 | 44.44 | 38.89 | 16.67 | |
| Bottom Half | 18 | 33.33 | 38.89 | 27.78 | |
| Mexico Equity Funds | | | | | |
| Top Half | 19 | 63.16 | 36.84 | 0.00 | |
| Bottom Half | 20 | 35.00 | 65.00 | 0.00 | |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 5: Five-Year Transition Matrix – Performance over Two Non-Overlapping Five-Year Periods (Based on Quartile)

| 0 | Fund Count at Start | | Five Year Percentages at End (December 2018-December 2023) | | | | | |
|---------------|-----------------------------------|---------------------|--|---------------------|------------------|--------------------------|--|--|
| Quartile | (December 2013- December 2018) | 1st Quartile (%) | 2nd Quartile (%) | 3rd Quartile (%) | 4th Quartile (%) | Merged Liquidated (%) | | |
| Brazil Equity | Funds | | | | | | | |
| 1st Quartile | 40 | 20.00 | 35.00 | 17.50 | 20.00 | 7.50 | | |
| 2nd Quartile | 39 | 7.69 | 25.64 | 28.21 | 17.95 | 20.51 | | |
| 3rd Quartile | 40 | 22.50 | 2.50 | 30.00 | 20.00 | 25.00 | | |
| 4th Quartile | 40 | 32.50 | 17.50 | 7.50 | 25.00 | 17.50 | | |
| Brazil Large- | Cap Funds | | | | | | | |
| 1st Quartile | 16 | 43.75 | 18.75 | 12.50 | 18.75 | 6.25 | | |
| 2nd Quartile | 16 | 12.50 | 31.25 | 31.25 | 6.25 | 18.75 | | |
| 3rd Quartile | 16 | 12.50 | 12.50 | 25.00 | 18.75 | 31.25 | | |
| 4th Quartile | 17 | 17.65 | 17.65 | 11.76 | 41.18 | 11.76 | | |
| Brazil Mid-/S | mall-Cap Funds | | | | | | | |
| 1st Quartile | 12 | 25.00 | 33.33 | 16.67 | 25.00 | 0.00 | | |
| 2nd Quartile | 11 | 18.18 | 18.18 | 18.18 | 36.36 | 9.09 | | |
| 3rd Quartile | 11 | 0.00 | 18.18 | 45.45 | 9.09 | 27.27 | | |
| 4th Quartile | 12 | 33.33 | 8.33 | 0.00 | 16.67 | 41.67 | | |
| Brazil Corpo | rate Bond Funds | | | | | | | |
| 1st Quartile | 9 | 33.33 | 44.44 | 11.11 | 0.00 | 11.11 | | |
| 2nd Quartile | 8 | 0.00 | 25.00 | 37.50 | 25.00 | 12.50 | | |
| 3rd Quartile | 9 | 0.00 | 0.00 | 22.22 | 33.33 | 44.44 | | |
| 4th Quartile | 9 | 33.33 | 0.00 | 0.00 | 22.22 | 44.44 | | |
| Brazil Gover | nment Bond Funds | | | | | | | |
| 1st Quartile | 47 | 70.21 | 17.02 | 2.13 | 2.13 | 8.51 | | |
| 2nd Quartile | 47 | 12.77 | 48.94 | 25.53 | 8.51 | 4.26 | | |
| 3rd Quartile | 47 | 2.13 | 12.77 | 55.32 | 6.38 | 23.40 | | |
| 4th Quartile | 47 | 0.00 | 4.26 | 0.00 | 68.09 | 27.66 | | |
| Chile Equity | Funds | | | | | | | |
| 1st Quartile | 7 | 0.00 | 28.57 | 14.29 | 14.29 | 42.86 | | |
| 2nd Quartile | 7 | 42.86 | 0.00 | 28.57 | 0.00 | 28.57 | | |
| 3rd Quartile | 7 | 14.29 | 28.57 | 14.29 | 28.57 | 14.29 | | |
| 4th Quartile | 7 | 0.00 | 0.00 | 0.00 | 28.57 | 71.43 | | |
| Mexico Equit | ty Funds | | | | | | | |
| 1st Quartile | 10 | 40.00 | 20.00 | 10.00 | 30.00 | 0.00 | | |
| 2nd Quartile | 9 | 33.33 | 33.33 | 0.00 | 11.11 | 22.22 | | |
| 3rd Quartile | 9 | 22.22 | 22.22 | 22.22 | 22.22 | 11.11 | | |
| 4th Quartile | 10 | 0.00 | 10.00 | 50.00 | 30.00 | 10.00 | | |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 6: Five-Year Transition Matrix – Performance over Two Non-Overlapping Five-Year Periods (Based on Halves)

| Fund Count at Start | | Five-Year Percentages at End (December 2018-December 2023) | | | | |
|----------------------|-----------------------------------|--|-----------------|---------------------------|--|--|
| Half | (December 2013- December 2018) | Top Half (%) | Bottom Half (%) | Merged/ Liquidated (%) | | |
| Brazil Equity | Funds | | | | | |
| Top Half | 79 | 44.30 | 41.77 | 13.92 | | |
| Bottom Half | 80 | 37.50 | 41.25 | 21.25 | | |
| Brazil Large-0 | Cap Funds | | | | | |
| Top Half | 32 | 53.13 | 34.38 | 12.50 | | |
| Bottom Half | 33 | 30.30 | 48.48 | 21.21 | | |
| Brazil Mid-/Sr | mall-Cap Funds | | | | | |
| Top Half | 23 | 47.83 | 47.83 | 4.35 | | |
| Bottom Half | 23 | 30.43 | 34.78 | 34.78 | | |
| Brazil Corpor | ate Bond Funds | | | | | |
| Top Half | 17 | 52.94 | 35.29 | 11.76 | | |
| Bottom Half | 18 | 16.67 | 38.89 | 44.44 | | |
| Brazil Govern | ment Bond Funds | | | | | |
| Top Half | 94 | 74.47 | 19.15 | 6.38 | | |
| Bottom Half | 94 | 9.57 | 64.89 | 25.53 | | |
| Chile Equity F | Funds | | | | | |
| Top Half | 14 | 35.71 | 28.57 | 35.71 | | |
| Bottom Half | 14 | 21.43 | 35.71 | 42.86 | | |
| Mexico Equity | y Funds | | | | | |
| Top Half | 19 | 63.16 | 26.32 | 10.53 | | |
| Bottom Half | 19 | 26.32 | 63.16 | 10.53 | | |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

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