Mind the Gap 2023 – Investor Returns Around the World

With volatility on the rise, fund investors have struggled to stay the course.

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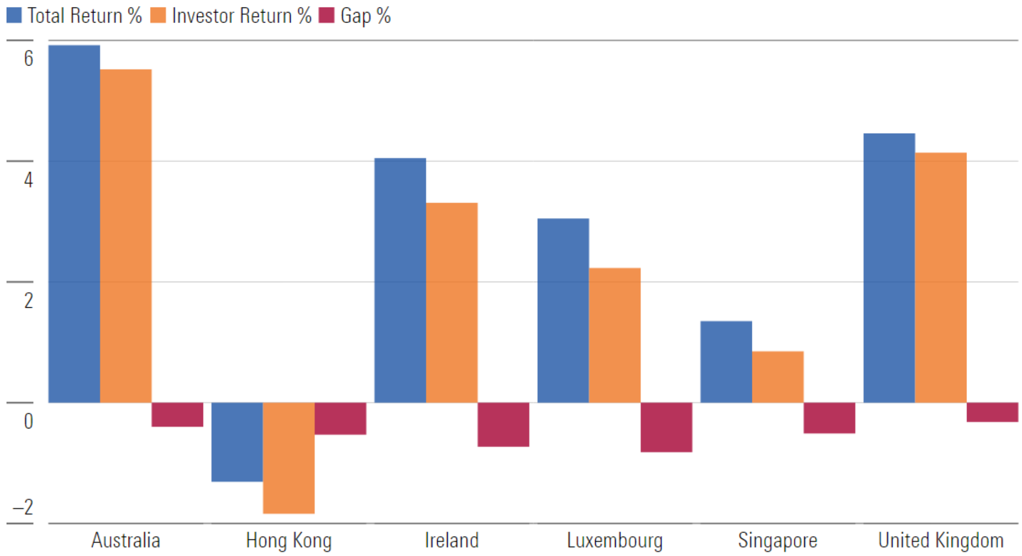
Key Takeaways

- The past five years were marked by the coronavirus pandemic, the Russia-Ukraine War, and steep rises in central bank rates. Investors had trouble staying the course and missed a meaningful share of funds' returns.
- All six domiciles studied show a negative investor return gap over the 2018-23 period, meaning that investors' timing of entries and exits detracted value compared with a hypothetical buy-and-hold investment.
- Fund investors in Australia and the United Kingdom suffered the smallest losses due to unfavorable timing. These markets are characterized by more holistic financial advice than the other markets included in the study, where funds are sold often as isolated products.
- Worst gaps were found in the cross-border markets of Ireland and Luxembourg, while in Hong Kong, investors suffered from negative absolute returns as Chinese markets went through tough times.
- Across asset classes, the most volatile categories and the most volatile funds within each Morningstar Category typically caused investors to lose more of their returns to timing of inflows and outflows.
- Compared with active equity strategies, equity index funds and exchange-traded funds seemed generally easier for investors to handle. Investor return gaps were narrower in index products compared with their active counterparts.
- The study reinforces the idea that investors perform best when sticking to simpler and less volatile products rather than following trends and chasing short-term performance.

Exhibit 1 Total Returns, Investor Returns, and the Return Gap 2018-23 Around the World



Source: Morningstar Direct. Data as of June 30, 2023. Returns between July 1, 2018, and June 30, 2023, for open-end and exchange-traded funds.

Introduction

Investors work hard to select great funds. But spotting great investments doesn't help much if the transactions occur at unfortunate times—bought near the top, sold at the bottom, or both. This pattern is often displayed as our behavioral tendencies lead us often to act irrationally with money. We often "follow the herd" by piling assets into funds that have recently done well, often missing the best returns, and then end up disappointed and sell at a loss.

Since its first edition in the United States in 2005[1], the Morningstar Mind the Gap study has thoroughly documented and discussed these biases. A key takeaway is that different types of funds nudge investors to behave differently. Markets also differ in how well investors can control their bad tendencies, depending on the products they can access and the type of advice they are receiving. In particular where funds are sold as products isolated from the investor's portfolio context, investors easily end up buying yesterday's winners. There are tangible lessons investors can draw from the results, and we highlight some of these tips in the conclusions.

This paper looks at how investors in six key fund markets around the world have navigated turbulent markets in the last five years. The study includes Australia, the European cross-border fund hubs of Ireland and Luxembourg (which represented around 55% of European assets under management), the United Kingdom, as well as Asian powerhouses Hong Kong and Singapore, and it covers the five-year period between July 1, 2018, and June 30, 2023. We last researched investor returns across global markets in 2019.[2]

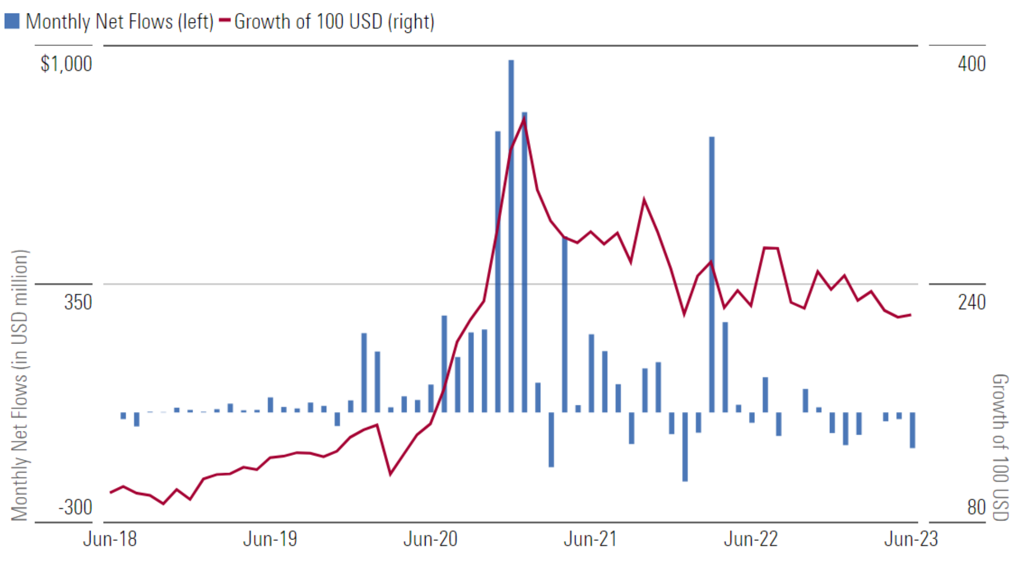
1 Kinnel, R. 2005. "Mind the Gap: How Good Funds Can Yield Bad Results." *Morningstar FundInvestor.* July.

2 Kinnel, R. & Möttölä, M. 2019. "Mind the Gap 2019: A Report on Investor Returns Around the Globe." December.

To measure investors' timing, this Mind the Gap study contrasts two types of returns to find the "behavior gap" between them. Total returns reflect the growth of a fund's value between the start and end of a period that can be earned with a buy-and-hold investment. Investor returns show the effect of flows by incorporating the amount of assets at the fund in different periods into the return calculation.[3] When investor returns lag total returns, the average dollar in the fund has earned less than what a hypothetical investor would have earned by staying invested for the entire period (with some caveats).[4]

In Exhibit 2, we show a textbook case of bad timing in the recently popular energy transition space. Money pouring into one of the largest funds in the alternative energy Morningstar Category, iShares Global Clean Energy ETF INRG, caused its fund size to double through 2020 to over USD 6 billion in January 2021. After the whopping 140% return in 2020 (in USD), the ETF experienced two consecutive calendar years in the red, and flows have dissipated. As a result, while total returns showed the fund performing 17.0% annualized over the 2018-23 period, the estimated investor return was negative 3.0% as most investors had entered the fund only after its strong returns, just in time to experience the subsequent underperformance.

Exhibit 2 Cumulative Returns and Net Estimated Flows of iShares Clean Energy ETF 2018-23



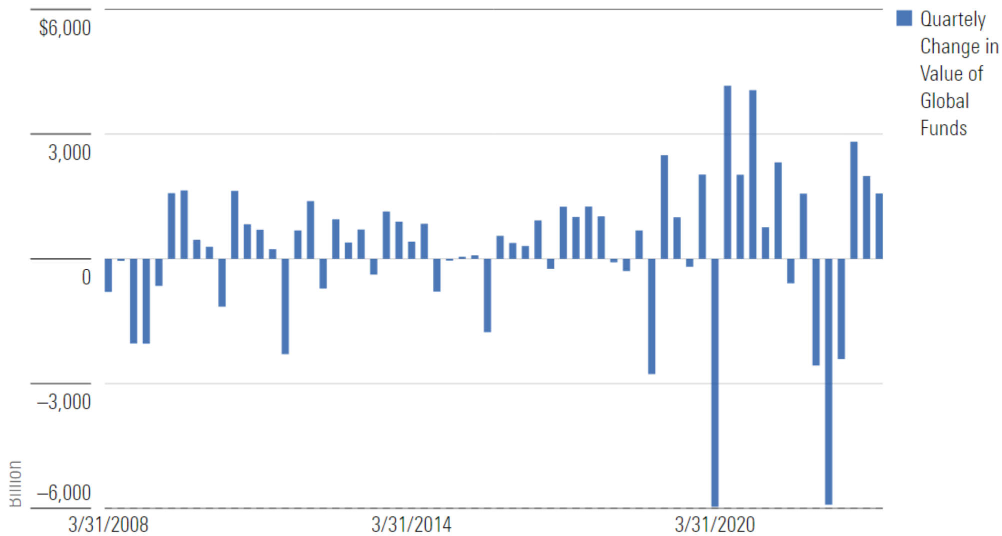
Source: Morningstar Direct. Data as of June 30, 2023.

The five-year period under analysis in this paper was markedly more volatile than the previous stretch, and this makes it a fruitful period for examination. Exhibit 3 shows how much more the value of assets in investment funds globally has zigzagged in recent years.

3 Total returns are often referred to as *time-weighted returns,* while investor returns are called *money- or dollar-weighted returns.*

4 Trading too often, buying funds after they've already run up, and selling in a panic can all eat away at investor returns. But even reasonable approaches to managing a portfolio can open a gap between investor results and reported total returns. This is because investor returns will never perfectly match total returns as few investors can simply buy and hold over each time period, and in some market conditions, a monthly saving plan, for example, will lead to worse results than a buy-and-hold approach.

Exhibit 3 Quarterly Change in Value of Investment Funds Globally 2008-23 in USD Billion



Source: Morningstar Direct Asset Flows. Data as of June 30, 2023.

The increased period of volatility commenced in late 2018 when hints of the U.S. Federal Reserve's changing interest-rate policy sparked market nervosity. But the market reached an inflexion point when the COVID-19 pandemic news flow darkened March 2020. A prolonged relief rally followed the quick selloff, but this eventually caused global inflation to shoot up and prompted central banks to hike rates. As a result, both equity and bond markets saw double-digit losses in 2022. Finally, in early 2023, markets became again more upbeat, and growth stocks particularly rebounded.

Amid these market swings, investors struggled more with timing than was revealed in our previous study. Funds domiciled in Ireland and Luxembourg both serve a broad range of investors from Europe and Asia, where funds are sold to retail investors predominantly with a retrocession model rather than one where advisors directly charge their fees from clients. This can lead to funds being sold based on the amount of fees they create to the distributor or advisor rather than their value for investors.[5] In both domiciles, a worryingly large share of total returns never reached investors' accounts: The 73-basis-point gap in Ireland (comparing asset-weighted total and investor returns) and the 82-basis-point Luxembourg gap represent 18% and 27% of total annualized returns in these markets overall, as shown in Exhibit 4.

But things were arguably even worse for investors in Hong Kong and Singapore when considering take-home returns. For Hong Kong-domiciled funds, while the gap was lower than in Ireland or Luxembourg (53 basis points), the average investor returns in the market were a painfully negative 1.84% annualized—with the sagging Chinese economy that weighed down many of the assets domiciled in Hong Kong to thank. In Singapore, investor returns were positive but only a little, by 0.85% on average. The investor gap there stood at 51 basis points per year.

5 Irish and Luxembourg funds are sold also without retrocessions, for example to institutions as well as to retail clients in the Netherlands and the U.K., where regulations do not permit retrocessions.

In the United Kingdom, investors lost 32 basis points of annualized return from the timing of their inflows and outflows. Equity, bond, and allocation funds all saw mildly negative gaps in the U.K., while alternatives sprang to a small positive gap. By contrast, in our last study from 2019, we had found that investors had generated a 27-basis-point annualized gain from timing over rolling five-year periods used in that study. (The studies have slightly different methodologies, as explained in the methodology appendix.)

Exhibit 4 Annualized Returns and Investor Returns for the Domiciles Included in the Study

Domicile	Total Return %	Investor Return %	Share Classes	Funds	Gap (pp)	Gap as % of Total Returns
Australia	5.92	5.52	1,580	869	**-0.40**	7%
Hong Kong	-1.31	-1.84	179	179	**-0.53**	41%
Ireland	4.05	3.31	9,912	1,992	**-0.73**	18%
Luxembourg	3.05	2.23	33,002	5,509	**-0.82**	27%
Singapore	1.35	0.85	134	134	**-0.51**	37%
United Kingdom	4.46	4.14	4,388	1,273	**-0.32**	7%

Source: Morningstar Direct. Data as of June 30, 2023. For Australia, count shows number of strategies.

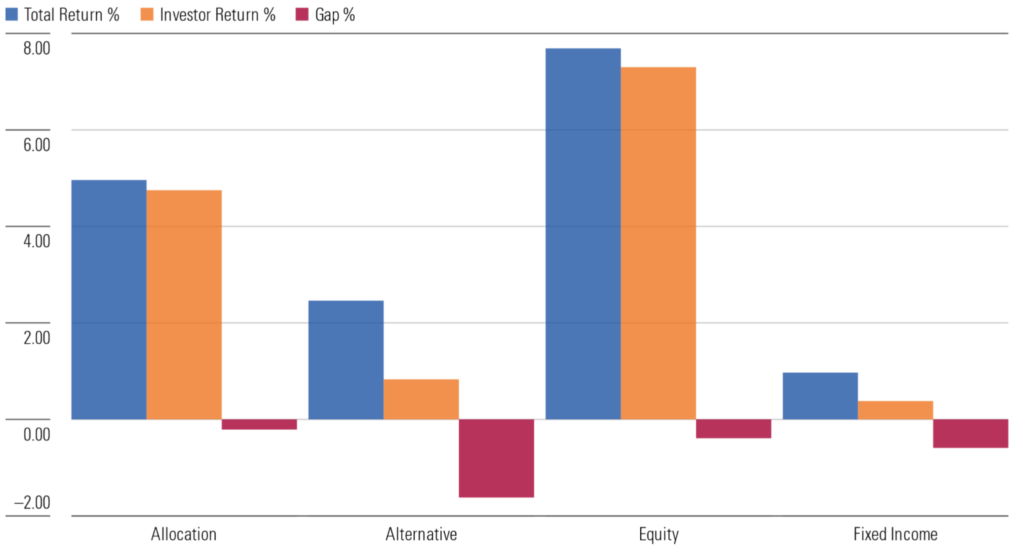
In Australia, we saw a similar picture, with a previous positive gap turning mildly negative. Allocation funds saw only a tiny gap of 21 basis points annualized, while investors in stock and especially in fixed-income funds experienced clearly larger gaps as macro news moved rates and currencies.

Investors' tendency to buy funds at the peak of the market after a stretch of strong performance is sometimes exacerbated by local market structures. In some parts of the world, including some European countries as well as the Hong Kong- and Singapore-domiciled fund markets, retail investors often rely on local institutions with entrenched distribution networks. As financial advisors are remunerated through distribution fees, funds are "sold, not bought" more often than not. As high fees are easier to mask with aggressive marketing tactics after a period of eye-popping returns, this can explain at least in part the larger gaps we observe in these markets compared with Australia and the United Kingdom.

Analysis by Fund Domicile

Australia

Exhibit 5 Australia Five-Year Gaps 2018-23 by Asset Class, Annualized



Source: Morningstar Direct. Data as of June 30, 2023.

In our previous study, Australia was the bright spot, with investors generating on average 65 basis points of returns annualized through the timing of inflows and outflows. It remains a market with relatively low gaps, but these have turned negative. The worsening of Australia's gaps is likely mostly a result of the difficult markets. The previous study encompassed the period between 2010 and 2018 (five rolling five-year periods), which mostly saw calmer and upward-trending markets. This time, there were multiple market-shaking events.

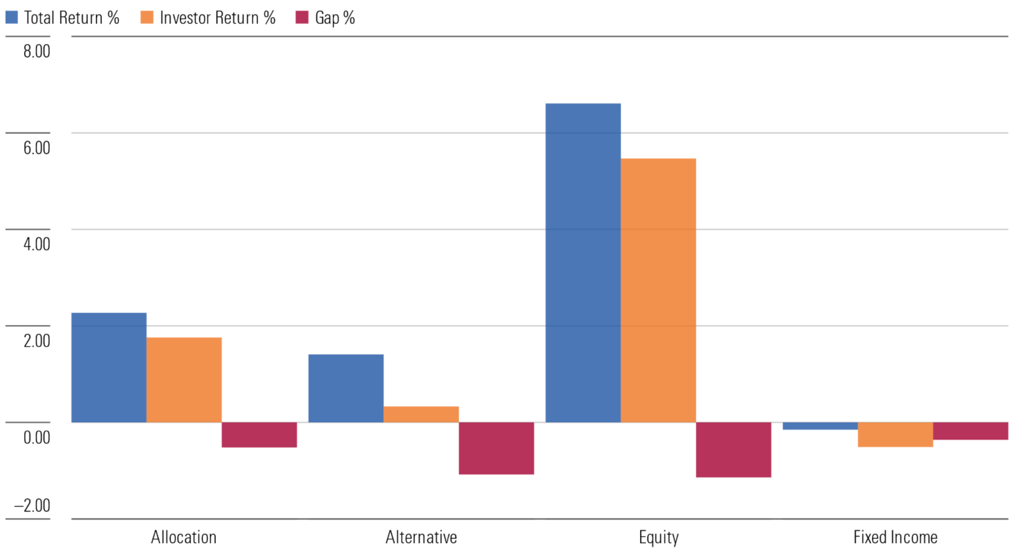
Allocation continues to be the area where Australian investors fall least prey to biases. Even in the Morningstar Category with the largest gap, multisector balanced, investor returns trailed total returns by only 35 basis points asset-weighted. Allocation funds generally are part of the core of a portfolio where investors make less frequent changes. Interestingly, within allocation, there was practically no correlation between the relative volatility of a fund and its investor return gap; investors were able to keep calm with all types of multi-asset funds in Australia.

Reassuringly, within the most populous equity Morningstar Category, Australia large blend, the asset-weighted gap was essentially zero. Investors in large Australia equity funds were particularly steady, while in smaller funds, the gap turned negative; this can result from flows generally affecting smaller funds more easily than larger funds. Risk was also a differentiating factor: Funds that were the riskiest quintile in their category saw the largest gaps in Australia, and more volatile categories such as those with a sector and growth stock focus saw bigger gaps.

Another challenging area for Australian fund investors was fixed income. In the large Australia bonds, Morningstar Category investors saw negative investor returns of 0.12% annualized, meaning their average Australian dollar saw losses over the period. Further, in global bonds, both the returns and the gap were even lower. In both these categories, investors in index funds saw particularly poor investor returns as they sold out of bonds in 2020 and 2021—although some of this money may have been put to better use elsewhere—for example, in equity funds.

Cross-Border Europe (Ireland and Luxembourg)

Exhibit 5 Cross-Border Five-Year Gaps 2018-23 by Asset Class, Annualized



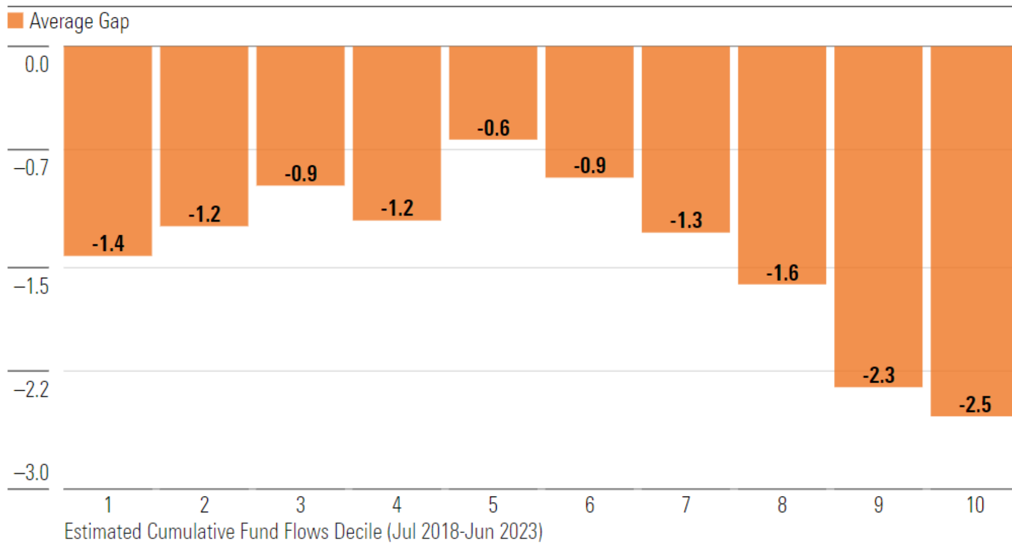
Source: Morningstar Direct. Data as of June 30, 2023.

In this study, we summarize the cross-border market by researching the two dominant domiciles, Ireland and Luxembourg. With around 7,500 funds included in the five-year numbers used in this study, Ireland and Luxembourg represent a large collection of investor types with capital from all over Europe as well as plenty of Asian investors. On the whole, the investor experience has been somewhat disappointing.

Investors in the cross-border space have struggled particularly within equities, which are also the largest market by assets under management. In Luxembourg, behavior gaps in equity open-end funds and ETFs fell to 1.32 percentage points per year, while in Ireland, the gap reached 0.91 (asset-weighted by share class). Our numbers show that investors tended to do better in larger funds; the equal-weighted average investor return gap was a painfully high 1.61 percentage points when both cross-border markets were included. These numbers are far higher than the 32-basis-point gap we saw in our previous study for Europe-domiciled equity funds. (France was included in that study alongside Ireland and Luxembourg but was left out this time as we focused on the cross-border fund market within Europe.)

Within equity, around 70% of funds and share classes exhibited a negative investor gap over the five-year period. And in many cases, the relative losses were painful, with one fund in four exhibiting a negative gap in excess of 300 basis points. Such cases were often found among small funds, and gaps were also higher for strategies that saw the largest total returns and highest volatility—a sign of performance chasing. This is further corroborated by the finding that the decile of funds with the highest net inflows over the period—the "hottest" funds—also saw the largest gaps.

Exhibit 6 Cross-Border Equity Fund Gaps by Net Flow Decile 2018-23 (Left: Lowest Net Flows, Right: Highest Flows)



Source: Morningstar Direct. Data as of June 30, 2023.

Within cross-border equities, the largest and most pervasive negative gaps are to be found in the most niche offerings, such as single-country and sector funds. This is not surprising, as these vehicles may be used more tactically compared with diversified core offerings such as global equity funds. One of the dominant themes over the past five-year period has been energy transition, but this proved a particularly difficult terrain for investors to navigate. In the sector equity alternative energy Morningstar Category, the average fund returned 13.3% (asset-weighted), but the average investor was left with a meager 2.9%, leading to a gaping 10.4-percentage-point gap. A major factor was the iShares Global Clean Energy ETF, which was highlighted in the introduction of this paper. The strategy is among the largest in the alternative energy Morningstar Category and received all of EUR 3 billion in net flows over 2020 on the back of strong returns. As the fund size rose to EUR 6 billion, capacity issues led to a change of benchmark index to expand the opportunity set, pushing the ETF's number of holdings to 100 from 30. The fund's returns then plummeted in 2021 and 2022. While investors suffered from their poor timing, they were also left with a very different portfolio from the one they may have invested in.

On the heels of geopolitical worries, several emerging-markets strategies were sore points. Amid the Chinese central government's crackdown and souring real estate market, China funds saw steep losses and exhibited significantly negative gaps. India funds also gave investors whiplash, with around three fourths of the funds showing a deeply (over 1 percentage point) negative investor gap.

An almost mirror-image took place in sector energy category, where funds invest mostly in fossil fuel companies. Here, gaps turned largely positive over the period. The largest fund, BGF World Energy (ISIN: LU0122376428), saw its highest monthly net inflow in April 2020. The timing could not have been better, as the strategy more than doubled in value since then. In contrast to these small categories, in large core categories, such as global large-cap blend (64 basis points) and Europe large-cap blend (52 basis points), gaps were moderate though still clearly negative.

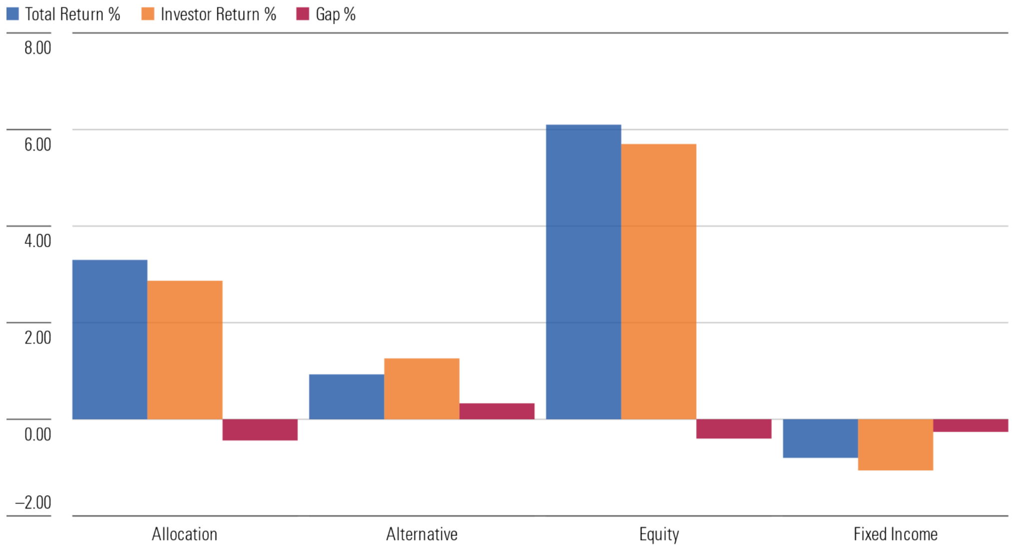
Another difficult area was liquid alternatives, where gaps grew to 108 basis points, with investors capturing less than one fourth of the asset-weighted total returns for the five-year period. Negative investor gaps are widespread in the alternative space, with three out of four funds in the red. As in other asset classes, gaps tend to widen for more volatile and smaller funds.

Compared with other asset classes, multi-asset fund investors were better off in the cross-border market, losing only slightly to the returns of a hypothetical buy-and-hold investor. One of the major headaches was Allianz Income and Growth (LU0685229519), Europe's largest allocation fund, which had more than USD 40 billion of assets at the end of June 2023. The fund's assets rose rapidly over 2020 as investors were swayed by its high returns and income distributions. Unfortunately, most investor flows entered the fund just before a more difficult period, leading investor returns in the fund to lag total returns by 1.26 percentage points asset-weighted.

Fixed-income investors in Ireland- and Luxembourg-domiciled vehicles have also struggled to time their flows after experiencing severe fluctuations in the bond markets over the past five years. The period included a significant COVID-19 slump with a widening of credit spreads and an uptick in default rates in early 2020, followed by a recovery in late 2020 and 2021. Then in 2022, interest-rate shocks cascaded across most of the developed world, instantly depressing bond values and placing most Morningstar fixed-income categories in the red. It's thus no surprise to see consistent investor return gaps across most categories. Investors appear to have struggled most in categories that experienced the largest drawdowns: Greater China high-yield bond and Asia high-yield bond Morningstar Category funds suffered massively on the back of the Chinese real estate sector's troubles over the past two years, causing many investors to flee after a period of painful negative returns. Similarly, investors in the global corporate bond and global emerging-markets corporate bond spaces also lost out to poor timing, as outflows tended to follow underperformance both during the coronavirus selloff and the 2022 rate-hike environment. Meanwhile, investors also missed an inflection in the USD inflation-linked bond category, by only reallocating to this market after inflation fears had materialized and U.S. inflation-linked bond funds had performed well.

United Kingdom

Exhibit 7 United Kingdom Five-Year Gaps 2018-23 by Asset Class, Annualized



Source: Morningstar Direct. Data as of June 30, 2023.

Alongside Australia, U.K. investors saw the clearest change in fortunes. From a slight 0.16 positive gap within equity funds in our previous study, this time around, the return gap fell to a negative 0.40 percentage points over the five-year period. Allocation funds saw a similar-size gap to equities, while in fixed income, the gap was 0.26 percentage points—all moderately low gaps compared with other markets in this study.

Within alternatives, there was a positive gap to the tune of 0.33 percentage points, with investors particularly in macro trading seeing more positive investor return outcomes than the uninspiring returns of many products. One of the contributors was the fall from grace of the abrdn Global Absolute Return Strategies (GARS) fund (GB00B28S0218). The lackluster performance profile started to see investors exit, but the bulk of outflows occurred at the start of the period, and most investors thus avoided the larger losses incurred in the most recent years (2022, 2023). Assets under management in the U.K.-domiciled version of the fund stood at GBP 17.1 billion at the start of the analysis period (June 30, 2018) and five years on capitulated to GBP 860 million. The firm has since announced it will be merging the fund's remaining assets into another strategy.

Within global equities, investment styles had different return gaps. While value stocks saw a torrid time over the analysis period, global value funds' investor returns were not too much behind total returns (an investor return gap of 28 basis points). This indicates that, encouragingly, investors didn't capitulate at the nadir. In contrast, within growth, the return gap was larger at 67 basis points. Growth as a style had worked extremely well for most of the years since the 2008 global financial crisis and took a further legup during the depth of the COVID-19 crisis, especially in some of the more speculative areas. As often happens when investors have been watching a period of strong performance from the sidelines, they finally pull the trigger to buy, perhaps on a "fear of missing out." Those who invested in the post-COVID run would have endured high paper losses as a result of the 2022 crash for growth stocks.

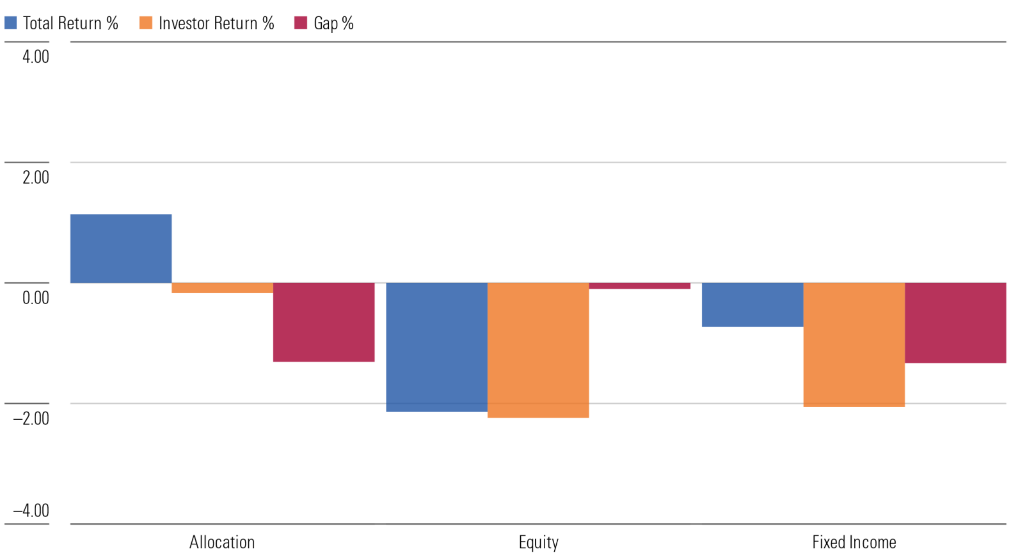
In a comparison between U.K.'s equity asset managers, Baillie Gifford is among the managers with an overall negative gap. It is also one of the houses running funds that typically has higher volatility than its peers. Counterintuitively, however, the company's most volatile fund, Baillie Gifford Long Term Global Growth (GB00BD5Z0Z54), in fact had a positive gap. The fund had outflows in each of the last five calendar years. Its investor base is biased toward institutions and pension funds, and the largest outflows came in the second half of calendar-year 2020. As outflows continued in 2022, a much smaller proportion of assets went through the near-40% drawdown in 2022.

In contrast, two Baillie Gifford funds, International (GB0005941272) and Global Alpha Growth (GB00B61DJ021), saw gaps deep in negative territory. Their performance profile was similar to the Long Term Global Growth fund, but the flows profile was strikingly different: Positive flows in 2020 were loaded toward the latter part of the year when performance started to turn, and large inflows continued in 2021 despite the sharp decline in these funds' values.

A similar story was seen in U.K. equities, where the most volatile area, small-cap stocks, had clearly negative flows, while in U.K. large caps, investor returns beat total returns.

Hong Kong

Exhibit 8 Hong Kong Five-Year Gaps 2018-23 by Asset Class, Annualized



Source: Morningstar Direct. Data as of June 30, 2023.

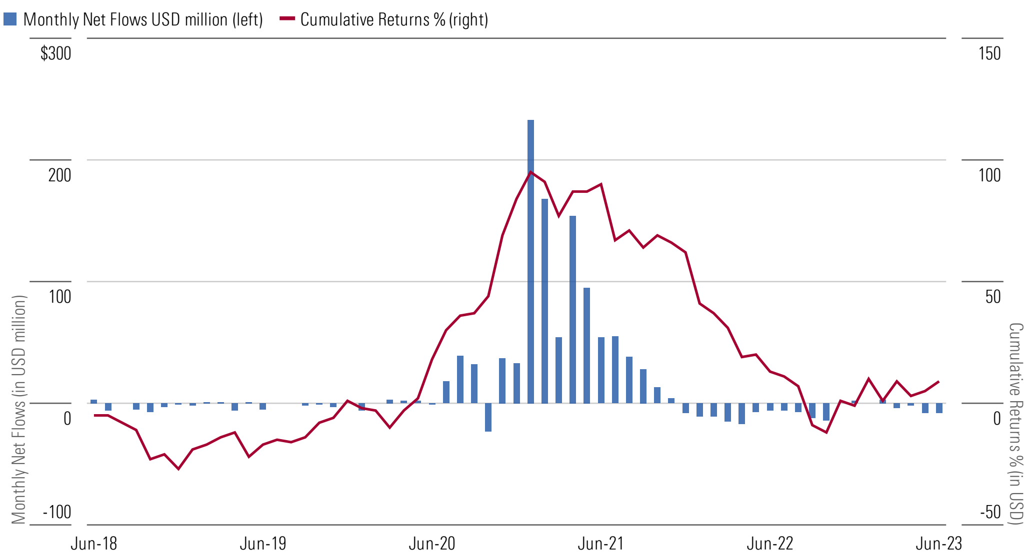
In Hong Kong-domiciled funds, the annualized gaps were negative across equity, fixed income, and allocation funds over the five-year period ended June 30, 2023 (weighted by fund-level assets), while all three asset classes also posted negative investor returns.

Almost USD 40 billion out of the USD 50 billion of equity assets were in funds classified under the Hong Kong equity, China equity, and China equity – A shares Morningstar Categories. Somewhat surprisingly, these three categories saw positive gaps despite the sharp China equity selloff over the past two years, which partly offset the overall gap in equities. However, the underlying picture diverges between active and passive funds. Within China equity, index-tracking funds dominated, with over USD 30 billion in assets, and were highly concentrated in a top few where return gaps were mostly positive, including for the Tracker Fund of Hong Kong ETF. That is the largest fund in the Hong Kong universe, with USD 16 billion of assets as of June 30, 2023.

Generally, these major index-trackers experienced more steady flows over time, in part because they benefited from the regular contributions of the Mandatory Provident Fund scheme, a compulsory pension system in Hong Kong. In contrast, flows of popular active funds were often more erratic. Active funds are typically sold by distributors as stand-alone products in Hong Kong, rather than as building blocks to construct a diversified portfolio. This creates incentives for performance-chasing behavior and ill-timed decisions. For example, the largest active China A-shares equity fund—JPMorgan China Pioneer A-Share (HK0000055621)—showed a negative gap of 3.8 percentage points per year, with poor timing fully eliminating the 3.43% annualized total returns and then some. Investors had redeemed money prior to the sharp rally in 2020 and subsequently poured new money into the fund right before the market selloff that began in mid-2021.

An even more striking example for the harmful impact of flows is the sector equity technology Morningstar Category, which exhibited the widest negative gap of 17.2 percentage points per year among all equity categories. This was predominantly due to the JPMorgan Pacific Technology fund (HK0000055761), which saw deeply negative investor returns. This fund's 82% returns in 2020 fueled skyrocketing inflows between late 2020 and early 2021, meaning an average investor likely missed out on the prior rally and suffered an ensuing peak-to-trough drawdown of 55% through October 2022.

Exhibit 9 Mistiming of Investments in JPM Pacific Technology, 2018-23

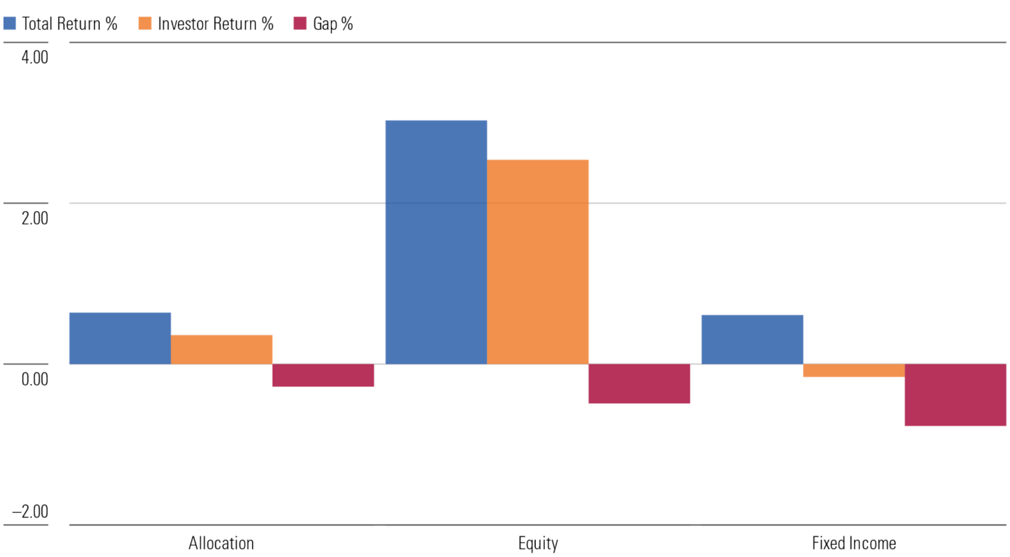


Source: Morningstar Direct. Data as of June 30, 2023.

Within fixed-income and allocation funds, the gaps were broadly negative or flat. Negative gaps were notably wider in the more volatile categories, such as Asia high yield and Greater China allocation, driven by mistimed inflows into a couple of the larger funds right before returns began to slide in 2021.

Singapore

Exhibit 10 Singapore Five-Year Gaps 2018-23 by Asset Class, Annualized



Source: Morningstar Direct. Data as of June 30, 2023.

In Singapore-domiciled funds, equity, fixed income, and allocation all saw negative gaps over the five-year period ended June 30, 2023. Like in Hong Kong, funds are typically recommended by distributors with a product-driven approach, increasing the likelihood of performance-chasing and bad timing. Around 80% of the Singapore universe's USD 34 billion of assets as of June 30, 2023, were in Asia strategies, with Singapore dollar bond (USD 6.5 billion), Asia allocation (USD 6.4 billion), and Singapore equity (USD 3 billion) being the largest Morningstar Categories.

Within equities, the gaps were negative for the majority of the underlying Morningstar Categories, but Singapore equity was the bright spot, with a positive gap of 1.96 percentage points per year. A few larger funds received notable inflows during 2020, and these assets benefited from improving returns in the following year. As in Hong Kong, the domicile's largest equity fund (SPDR Straits Times Index ETF, ISIN: SG1W45939194) saw a positive gap.

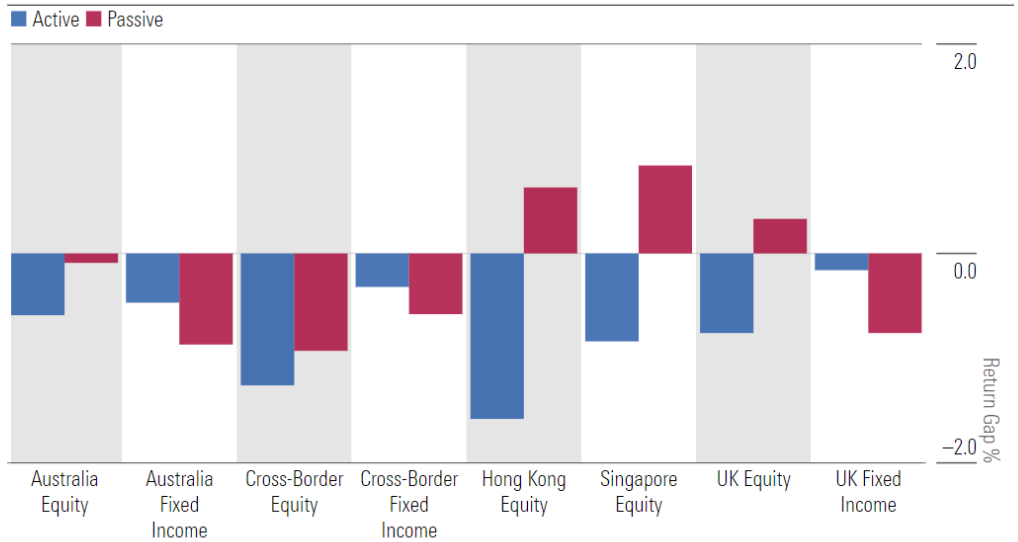
Broadly speaking, the average investor earned less than the reported total returns over the trailing five years across SGD bond funds and Asian fixed-income funds. Most of their inflows during the period came in prior to the market downturn that started in the second half of 2021, denting investor returns. In the Asia high-yield bond category, iShares Barclays Cap USD Asia High Yield Bond ETF (ISIN: SG2D83975482) suffered a large gap of 12.3 percentage points due to substantial inflows into the fund following its peak in May 2021, which bloated its assets from below USD 400 million to over USD 2 billion, only to see the returns plummet after.

About 80% of allocation fund assets resided in the Asia allocation category, which fared worst among allocation categories. This was driven by the largest fund, First Sentier Bridge Fund (SG9999002067), seeing large inflows following its strong performance between 2019 and 2021, before returns trended downward.

Analysis by Investment Type

Active Versus Passive

Exhibit 11 Active Versus Passive Gaps 2018-23



Source: Morningstar Direct. Data as of June 30, 2023.

Globally, assets have been moving to passive funds at a considerable pace. Apart from their lower price, an argument for passives is their ease of use: Investors know that the vehicle will track the benchmark closely, rather than bounce on and off of it based on portfolio managers' views. Active strategies may change their investment style in ways that make a fund less interesting for a client. Or its portfolio manager may leave, leaving investors with the decision whether to move ship. In isolation, a passive strategy may be easier to hold on to and thus reduce investors' temptation to overreact to short-term out- or underperformance.

The reality is more nuanced, however. Within equity, passive funds seem to have been the better choice in the trailing five years through June 30, 2023. They have had both higher returns (apart from Hong Kong) and lower return gaps.

In contrast, active fixed-income funds held up slightly better than their passive counterparts, both from a return and gap perspective. Within the cross-border universe, active bond funds' gap was 32 basis points on average, against a 58-basis-point gap for passives. This has coincided with a period of sharply rising interest rates, in which some active managers were able to quickly reduce the duration of their portfolios to protect returns, while passive funds simply kept their duration in line with the benchmark. Still, investor return gaps are not easily comparable between the active and passive cohort because of significant differences in their underlying universes. Passive options are primarily used in the most liquid areas of the bond market (developed-markets government bonds and high-quality corporate fare), while active funds span the whole breadth of the spectrum, including the segments of the market that have struggled the most over the past two years (Asian credits, high-yield bonds, emerging-markets debt).

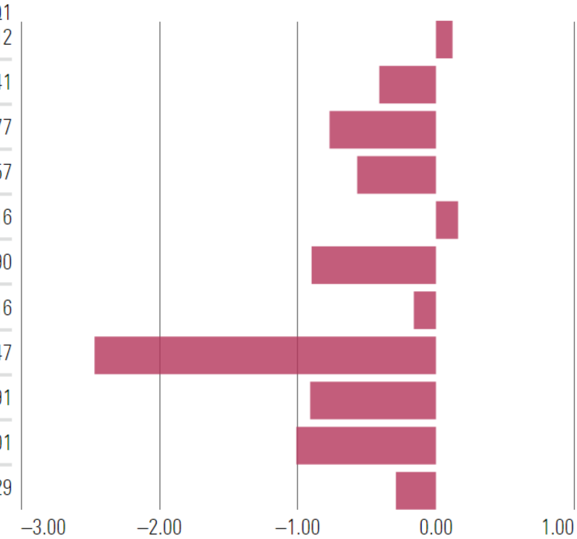
In Australia, we saw a similar picture, with the small number of passive fixed-income funds doing particularly poorly on returns and gaps.

One caveat to keep in mind is that in this study we use monthly data, while many exchange-traded funds see frequent trading in and out of the fund on a daily, or even intra-day, basis. For example, many fund managers put assets to work through passive ETFs before settling in on fundamental picks that they need some time to select. In such cases, the timing may be driven by cash coming into a fund rather than a view on market conditions. The numbers in this study therefore present a picture of the tendencies of longer-term investors in these funds.

Standard Deviation

Exhibit 12 Gap Difference Between Most Volatile Funds in Their Category Versus Least Volatile (Q5-Q1)

Domicile - Asset Class	Gap Difference Q5-Q1
Australia - Allocation	0.12
Australia - Equity	–0.41
Australia - Fixed Income	–0.77
Cross-Border - Allocation	–0.57
Cross-Border - Alternative	0.16
Cross-Border - Equity	–0.90
Cross-Border - Fixed Income	–0.16
Hong Kong - Equity	–2.47
United Kingdom - Allocation	–0.91
United Kingdom - Equity	–1.01
United Kingdom - Fixed Income	–0.29



Source: Morningstar Direct. Data as of June 30, 2023.

As has been shown above, investors struggle most with funds in more-volatile categories. Sector funds have seen especially poor average gaps. But how do the results look when we compare more-volatile funds within a Morningstar Category against less-volatile strategies?

To analyze these differences, we split funds by their five-year standard deviations into quintiles within each category, and we compare total returns, investor returns, and gaps between the most volatile quintile (Q5) and the least volatile quintile (Q1). There were 11 cohorts that had a reasonable number of funds for a quintile analysis.

In Exhibit 12, we show the difference between asset-weighted averages in the first and the fifth quintiles. In nine of the 11 cohorts, investors struggled more with volatile funds in timing their investments. The extreme example was Hong Kong equity, where the return gap was 2.47 percentage points worse in the most volatile quintile (negative 1.02%) compared with the least volatile (positive 1.45%).

The two exceptions were Australian allocation funds and the cross-border alternative space, where the gap difference was also slightly tipped in favor of more-volatile funds. But in this latter group, figures remain disappointing at an absolute level, when the quintile average investor returns were a meager 0.30% in the least volatile and 0.50% in the most volatile quintile.

The key lesson is that funds differ also within categories. It's always important for investors to keep their cool with high-flying funds, which often have higher active risk than their peers and thus may perform very differently from competitors and the index.

Conclusion

The period of July 2018 through the end of June 2023 has been trickier for investors to navigate, as shown in the generally larger gaps between total returns and investor returns, than the period covered in our previous 2019 study. We also identify in the text multiple cases where a fund suddenly became popular and saw a rush of inflows—just before, or even after, its returns plateaued.

Still, there were bright spots. In some markets like Australia and the United Kingdom, investor return gaps remained modest in light of the extreme market conditions. In Hong Kong, flows into ETFs were more measured and incremental than in active funds, in part thanks to a favorable compulsory pension scheme, which helped ETF investors capture a higher portion of total returns. Also in some areas, such as global value equities that have underperformed the broader market, investors have tended to stay the course.

The lessons from the study can be summarized as follows:

- Investors tend to do the least harm through the timing of buys and sells when investing in less volatile offerings. Allocation funds, which are typically well-diversified core holdings for many long-term investors, saw gaps that were among the lowest across the six domiciles analyzed in this study.
- High-risk categories such as sector funds are often difficult to navigate. Returns come often in lumps, and investors throw money into these funds only after they have already seen a good chunk of their performance run.
- Similarly, within each category, we find that investors are often better off selecting the least volatile funds compared with the highest-risk products. The most volatile funds often have high active risk that can lead them to either out- or underperform by a large margin. This can cause uneasiness, and in tough times, investors may be prone to sell too early.
- The markets with the smallest gaps were Australia and the United Kingdom, where financial advice is more focused on investors' total portfolios than individual products. By contrast, in markets where funds

are more frequently "sold, not bought," such as some European countries, investor behavior leans toward being more counterproductive. By staying focused on long-term goals and allocations, investors can reduce the temptation of performance-chasing and disproportionately high stakes in big-risk funds.

Appendix

Methodology

Total returns, also known as *time-weighted returns,* are the returns typically reported by funds in their fact sheets or websites. The total returns used in this study are based on a monthly time series and are reported after fees of each share class.

Investor returns, also called *money-weighted returns*, reflect not just the return of the underlying assets but also the flows in and out of the fund. Put simply, investor returns reveal the return of each dollar in the fund. It is calculated with the standard internal rate-of-return formula of:

$$IRR_{monthly} = Total\ Net\ Assets_{t=0} + \sum_{t=1}^{T-1} Net\ Flow_t + (Net\ Flow_T - Total\ Net\ Assets_T)$$

This monthly IRR number is then annualized through the formula

$$\mathrm{IRR}_{Annual} = (1 + IRR_{Monthly})^{12} - 1$$

We have calculated averages of these returns with multiple methods to understand the nuances in the data, but the standard way to report results in this study is asset-weighted average at the share-class level. The weight used is the average USD assets in the share class (or fund for Hong Kong and Singapore where coverage of share class level asset data is not sufficient) over the period. (In our 2019 paper, we used a portfolio method to calculate returns, weighting total returns in each group on a monthly basis and using total assets and flows in a group to estimate investor returns for each group.)

Morningstar does not collect actual flows from fund companies, but flows can be estimated as the change in assets that is not explained by returns.

$$Net\ Flow\ (period) = Total\ Net\ Assets_T - Total\ Net\ Assets_t * (1 + Period\ Return)$$

With this formula, we are also able to handle distributions from funds. They are considered as outflows. If we did not include the distributions (also called *dividends*) in the flow figure, the investor return of the fund would look lower.

The "Behavior Gap" is calculated as the difference between the investor return and total return averages within a group.

Both open-end funds and exchange-traded funds are included in this study. There's often active daily trading in ETFs, but our method does capture it. This approach gives us a more uniform dataset and focuses on the behavior of long-term investors in both vehicle types.

We include only share classes that have been alive for the full research period. Excluding share classes that were merged or liquidated during the period gives the dataset a survivorship bias and is a difference to our 2019 global Mind the Gap (as well as our 2023 U.S. Mind the Gap). In our testing, we found this change to have a notable effect in areas of the market, such as alternative funds, where fund lineup turnover is rampant. In those areas, our dataset is likely to show higher returns than a survivorship-bias-free one would. Funds that were created during the period aren't included either, as was also the case in our previous study.

To be consistent, we also exclude funds involved in mergers during the research period. A merger causes a movement of assets into a fund without the active decisions of investors—the core subject matter of our study.

For Australia-, Ireland-, Luxembourg-, and United Kingdom-domiciled funds, we use share class data, as it is widely available in these markets. In Hong Kong and Singapore, there are more companies reporting only at the fund level. In Hong Kong and Singapore, we compare the returns of a representative retail share class with the investor returns derived from fund-level flows. The representative share classes were qualitatively selected with a preference for retail share classes where available. In U.S.-dollar and Hong Kong-dollar-denominated categories, we preferred USD and HKD share classes, while in other categories, our preference was for USD or HKD hedged share classes.

Because investor returns are not meaningful over short periods, we focus on the trailing five-year period. Longer periods would have suffered from fund lineup turnover that causes the samples to shrink considerably.

Feeder funds are excluded from the study to limit double-counting of assets. For the same reason, when calculating overall results for each domicile, we exclude fund of funds. In our fund-level numbers, we have used Morningstar's "FundId" data point in all markets except for Australia, where we consider all share classes under a "StrategyId" to represent a fund. This is due to the practice of having products on multiple platforms following the same strategy.

Exhibit 13 Asset-Class Returns and Gaps Over Five-Year Period July 2018 Through June 2023

Global Broad Category Group	Total Return %	Investor Return %	Gap pp	Share Classes	Funds
Australia					
Allocation	4.96	4.75	-0.21	410	204
Alternative	2.46	0.83	-1.62	32	23
Equity	7.69	7.30	-0.39	984	531
Fixed Income	0.97	0.38	-0.59	247	157
Cross-Border (Ireland and Luxembourg)					
Allocation	2.27	1.76	-0.52	5,782	1,671
Alternative	1.41	0.33	-1.08	1,460	267
Equity	6.61	5.47	-1.14	18,012	3,359
Fixed Income	-0.15	-0.51	-0.36	15,884	2,293
Hong Kong					
Allocation	1.14	-0.17	-1.31		33
Equity	-2.14	-2.24	-0.10		121
Fixed Income	-0.73	-2.06	-1.33		37
Singapore					
Allocation	0.64	0.36	-0.28		21
Equity	3.03	2.54	-0.49		80
Fixed Income	0.61	-0.16	-0.77		38
United Kingdom					
Allocation	3.30	2.87	-0.44	1,475	531
Alternative	0.93	1.26	0.33	63	21
Equity	6.10	5.70	-0.40	2,189	630
Fixed Income	-0.80	-1.06	-0.26	670	184

Source: Morningstar Direct. Data as of June 30, 2023. Only fund-level data for Hong Kong and Singapore.

Exhibit 14 Australia—Morningstar Category Returns and Gaps 2018-23

Asset Class	Morningstar Category	Total Return %	Investor Return %	Gap pp	Share Classes	Funds
Allocation	Australia Fund Multisector Aggressive	6.82	6.72	-0.11	94	50
Allocation	Australia Fund Multisector Balanced	4.15	3.80	-0.35	75	37
Allocation	Australia Fund Multisector Growth	5.53	5.29	-0.23	120	56
Allocation	Australia Fund Multisector Moderate	2.75	2.54	-0.21	73	37
Equity	Australia Fund Equity Australia Large Blend	6.79	6.80	0.01	189	96
Equity	Australia Fund Equity Australia Large Value	6.60	6.14	-0.46	62	32
Equity	Australia Fund Equity Australia Mid/Small Blend	6.43	5.67	-0.76	53	41
Equity	Australia Fund Equity Emerging Markets	3.28	3.00	-0.27	47	32
Equity	Australia Fund Equity World - Currency Hedged	8.02	8.14	0.12	56	37
Equity	Australia Fund Equity World Large Blend	10.08	9.75	-0.32	134	73
Fixed Income	Australia Fund Bonds - Australia	0.56	-0.12	-0.68	69	41
Fixed Income	Australia Fund Diversified Credit	1.70	1.38	-0.32	51	31

Source: Morningstar Direct. Data as of June 30, 2023. Minimum 30 funds with investor returns.

Exhibit 15 Cross-Border—Morningstar Category Returns and Gaps 2018-23 (Allocation, Alternative)

Asset Class	Morningstar Category	Total Return %	Investor Return %	Gap pp	Share Classes	Funds
Allocation	EAA Fund CHF Cautious Allocation	-0.69	-0.47	0.22	90	43
Allocation	EAA Fund CHF Moderate Allocation	0.23	0.08	-0.14	100	50
Allocation	EAA Fund EUR Aggressive Allocation - Global	3.79	3.14	-0.65	380	163
Allocation	EAA Fund EUR Cautious Allocation	0.79	0.48	-0.31	148	57
Allocation	EAA Fund EUR Cautious Allocation - Global	-0.03	-0.27	-0.24	573	221
Allocation	EAA Fund EUR Flexible Allocation	1.53	1.13	-0.40	138	69
Allocation	EAA Fund EUR Flexible Allocation - Global	2.45	1.91	-0.54	851	395
Allocation	EAA Fund EUR Moderate Allocation	1.48	0.74	-0.74	112	51
Allocation	EAA Fund EUR Moderate Allocation - Global	1.80	1.41	-0.39	733	277
Allocation	EAA Fund GBP Allocation 40-60% Equity	2.85	2.65	-0.20	177	60
Allocation	EAA Fund GBP Flexible Allocation	2.01	1.62	-0.40	95	41
Allocation	EAA Fund Other Allocation	1.80	1.68	-0.12	580	219
Allocation	EAA Fund USD Aggressive Allocation	4.93	4.68	-0.25	169	52
Allocation	EAA Fund USD Cautious Allocation	1.67	1.37	-0.29	186	69
Allocation	EAA Fund USD Flexible Allocation	2.76	2.03	-0.72	254	99
Allocation	EAA Fund USD Moderate Allocation	4.26	2.99	-1.27	532	116
Alternative	EAA Fund Alternative Other	2.80	2.30	-0.50	98	42
Alternative	EAA Fund Macro Trading EUR	-0.42	-0.64	-0.22	157	41
Alternative	EAA Fund Multistrategy EUR	-0.03	-1.39	-1.35	148	57
Alternative	EAA Fund Multistrategy Other	-0.10	-2.14	-2.05	72	30
Alternative	EAA Fund Multistrategy USD	2.81	1.98	-0.83	117	49

Source: Morningstar Direct. Data as of June 30, 2023. Minimum 30 funds with investor returns.

Exhibit 16 Cross-Border—Morningstar Category Returns and Gaps 2018-23 (Equity)

Asset Class	Morningstar Category	Total Return %	Investo r Return %	Gap pp	Share Classes	Funds
Equity	EAA Fund Asia ex-Japan Equity	1.39	0.25	-1.14	440	79
Equity	EAA Fund Asia-Pacific ex-Japan Equity	2.99	2.30	-0.68	187	33
Equity	EAA Fund China Equity	-3.47	-5.36	-1.88	359	67
Equity	EAA Fund Europe Equity Income	3.84	2.55	-1.29	182	30
Equity	EAA Fund Europe Flex-Cap Equity	4.81	2.91	-1.90	184	48
Equity	EAA Fund Europe Large-Cap Blend Equity	5.77	5.25	-0.52	649	167
Equity	EAA Fund Europe Large-Cap Growth Equity	7.53	7.18	-0.36	182	33
Equity	EAA Fund Europe Large-Cap Value Equity	4.40	2.13	-2.27	138	30
Equity	EAA Fund Europe Small-Cap Equity	2.77	1.47	-1.30	217	55
Equity	EAA Fund Eurozone Large-Cap Equity	6.30	5.33	-0.98	348	99
Equity	EAA Fund Global Emerging Markets Equity	1.33	0.75	-0.58	1,354	244
Equity	EAA Fund Global Equity Income	6.37	5.04	-1.33	458	72
Equity	EAA Fund Global Flex-Cap Equity	6.62	5.11	-1.51	257	77
Equity	EAA Fund Global Large-Cap Blend Equity	8.37	7.73	-0.64	1,378	367
Equity	EAA Fund Global Large-Cap Growth Equity	8.05	6.55	-1.50	647	134
Equity	EAA Fund Global Large-Cap Value Equity	6.67	5.74	-0.93	228	45
Equity	EAA Fund Global Small/Mid-Cap Equity	5.61	5.29	-0.32	182	42
Equity	EAA Fund India Equity	7.80	5.90	-1.90	256	45
Equity	EAA Fund Japan Large-Cap Equity	5.23	4.32	-0.91	507	97
Equity	EAA Fund Long/Short Equity - Global	2.79	0.90	-1.89	113	30
Equity	EAA Fund Long/Short Equity - Other	2.99	1.80	-1.18	268	59
Equity	EAA Fund Other Equity	6.56	5.29	-1.27	3,439	979
Equity	EAA Fund Property - Indirect Global	0.74	0.55	-0.19	238	43
Equity	EAA Fund Property - Indirect Other	-1.70	-2.01	-0.31	106	31
Equity	EAA Fund Sector Equity Consumer Goods & Services	5.65	2.13	-3.52	109	34
Equity	EAA Fund Sector Equity Healthcare	8.55	7.14	-1.41	183	44
Equity	EAA Fund Sector Equity Technology	13.35	10.88	-2.47	288	69
Equity	EAA Fund UK Large-Cap Equity	3.22	3.74	0.52	120	35
Equity	EAA Fund US Large-Cap Blend Equity	11.74	11.02	-0.72	666	164
Equity	EAA Fund US Large-Cap Growth Equity	10.76	10.32	-0.44	352	65
Equity	EAA Fund US Large-Cap Value Equity	7.63	5.73	-1.90	219	38
Equity	EAA Fund US Small-Cap Equity	6.25	4.66	-1.59	210	38

Source: Morningstar Direct. Data as of June 30, 2023. Minimum 30 funds with investor returns.

Exhibit 17 Cross-Border—Morningstar Category Returns and Gaps 2018-23 (Fixed Income)

Asset Class	Morningstar Category	Total Return %	Inv Return %	Gap pp	Share Classes	Funds
Fixed Income	EAA Fund Asia Bond	0.14	-0.96	-1.10	190	32
Fixed Income	EAA Fund EUR Bond - Long Term	-4.12	-4.54	-0.42	48	127
Fixed Income	EAA Fund EUR Corporate Bond - Short Term	-0.45	-0.58	-0.13	89	115
Fixed Income	EAA Fund EUR Diversified Bond	-1.87	-1.90	-0.03	393	39
Fixed Income	EAA Fund EUR Diversified Bond - Short Term	-0.62	-0.78	-0.15	167	59
Fixed Income	EAA Fund EUR Flexible Bond	-0.50	-0.61	-0.11	179	75
Fixed Income	EAA Fund EUR Government Bond - Short Term	-0.81	-0.88	-0.07	41	73
Fixed Income	EAA Fund Fixed Term Bond	-0.54	-0.15	0.38	46	37
Fixed Income	EAA Fund Global Bond	-1.15	-1.24	-0.09	409	99
Fixed Income	EAA Fund Global Bond - CHF Hedged	-2.31	-3.36	-1.05	80	40
Fixed Income	EAA Fund Global Bond - EUR Hedged	-1.93	-2.12	-0.19	342	97
Fixed Income	EAA Fund Global Bond - GBP Hedged	-0.13	-2.01	-1.88	120	54
Fixed Income	EAA Fund Global Bond - USD Hedged	0.77	0.04	-0.73	232	70
Fixed Income	EAA Fund Global Corporate Bond - EUR Hedged	-0.95	-1.16	-0.21	200	60
Fixed Income	EAA Fund Global Corporate Bond - GBP Hedged	0.18	0.02	-0.16	85	36
Fixed Income	EAA Fund Global Corporate Bond - USD Hedged	1.08	0.98	-0.10	200	46
Fixed Income	EAA Fund Global Emerging Markets Bond	0.03	-0.30	-0.33	755	138
Fixed Income	EAA Fund Global Emerging Markets Bond - EUR Biased	-1.76	-1.84	-0.08	451	118
Fixed Income	EAA Fund Global Emerging Markets Bond - Local Currency	0.68	0.22	-0.47	454	64
Fixed Income	EAA Fund Global Emerging Markets Corporate Bond	1.43	-0.01	-1.44	285	56
Fixed Income	EAA Fund Global Emerging Markets Corporate Bond - EUR Biased	-1.16	-1.84	-0.69	176	47
Fixed Income	EAA Fund Global Flexible Bond	0.15	0.25	0.10	303	71
Fixed Income	EAA Fund Global Flexible Bond - CHF Hedged	-0.52	-0.88	-0.36	164	65
Fixed Income	EAA Fund Global Flexible Bond - EUR Hedged	-0.25	-0.64	-0.39	675	134
Fixed Income	EAA Fund Global Flexible Bond - GBP Hedged	0.87	0.66	-0.21	224	78
Fixed Income	EAA Fund Global Flexible Bond - USD Hedged	2.05	1.22	-0.83	392	85
Fixed Income	EAA Fund Global High Yield Bond	2.15	1.84	-0.31	480	85
Fixed Income	EAA Fund Global High Yield Bond - CHF Hedged	0.30	-0.40	-0.70	81	34
Fixed Income	EAA Fund Global High Yield Bond - EUR Hedged	0.62	0.34	-0.28	342	90
Fixed Income	EAA Fund Global High Yield Bond - GBP Hedged	1.50	1.52	0.01	117	45
Fixed Income	EAA Fund Other Bond	-0.67	-1.00	-0.33	4176	899
Fixed Income	EAA Fund USD Corporate Bond	1.90	2.50	0.60	171	53
Fixed Income	EAA Fund USD Diversified Bond	0.56	0.19	-0.38	244	47
Fixed Income	EAA Fund USD Diversified Bond - Short Term	1.38	1.07	-0.31	126	31
Fixed Income	EAA Fund USD Government Bond	0.49	-0.22	-0.71	120	37
Fixed Income	EAA Fund USD High Yield Bond	2.64	2.28	-0.36	468	71

Source: Morningstar Direct. Data as of June 30, 2023. Minimum 30 funds with investor returns.

Exhibit 18 United Kingdom—Morningstar Category Returns and Gaps 2018-23

Asset Class	Morningstar Category	Total Return %	Investor Return %	Gap pp	Share Classes	Funds
Allocation	EAA Fund GBP Allocation 20-40% Equity	1.39	0.53	-0.86	216	64
Allocation	EAA Fund GBP Allocation 40-60% Equity	2.31	1.78	-0.54	421	129
Allocation	EAA Fund GBP Allocation 60-80% Equity	4.04	3.52	-0.52	391	161
Allocation	EAA Fund GBP Allocation 80%+ Equity	6.12	5.47	-0.65	217	89
Allocation	EAA Fund GBP Flexible Allocation	2.71	2.98	0.27	140	38
Allocation	EAA Fund Other Allocation	2.88	3.84	0.96	47	30
Equity	EAA Fund Europe ex-UK Equity	6.14	5.37	-0.78	164	48
Equity	EAA Fund Global Emerging Markets Equity	2.69	1.47	-1.21	109	31
Equity	EAA Fund Global Large-Cap Blend Equity	8.80	8.72	-0.07	186	77
Equity	EAA Fund Other Equity	6.90	6.91	0.01	58	30
Equity	EAA Fund UK Equity Income	1.85	1.01	-0.84	238	51
Equity	EAA Fund UK Flex-Cap Equity	1.37	0.91	-0.46	102	37
Equity	EAA Fund UK Large-Cap Equity	3.03	3.59	0.56	214	66
Equity	EAA Fund UK Small-Cap Equity	1.47	-0.06	-1.53	100	37
Fixed Income	EAA Fund GBP Corporate Bond	-1.18	-0.92	0.26	165	46

Source: Morningstar Direct. Data as of June 30, 2023. Minimum 30 funds with investor returns.

Exhibit 19 Active Versus Passive Gaps 2018-23

Domicile	Global Broad Category Group	Active/Passive	Total Return %	Investor Return %	Fund Count	Return Gap pp
Australia	Equity	Active	7.14	6.55	419	-0.59
Australia	Equity	Passive	8.52	8.43	112	-0.09
Australia	Fixed Income	Active	1.27	0.80	125	-0.47
Australia	Fixed Income	Passive	0.28	-0.59	32	-0.87
Cross-Border	Equity	Active	5.99	4.73	2,651	-1.26
Cross-Border	Equity	Passive	7.73	6.80	708	-0.93
Cross-Border	Fixed Income	Active	-0.09	-0.42	2,039	-0.32
Cross-Border	Fixed Income	Passive	-0.42	-1.01	254	-0.58
Hong Kong	Equity	Active	-0.15	-1.73	70	-1.58
Hong Kong	Equity	Passive	-3.12	-2.48	51	0.63
Singapore	Equity	Active	2.80	1.95	68	-0.84
Singapore	Equity	Passive	3.92	4.76	12	0.84
United Kingdom	Equity	Active	5.43	4.67	563	-0.76
United Kingdom	Equity	Passive	7.52	7.85	63	0.33
United Kingdom	Fixed Income	Active	-0.59	-0.74	169	-0.16
United Kingdom	Fixed Income	Passive	-1.86	-2.63	15	-0.76

Source: Morningstar Direct. Data as of June 30, 2023.

Exhibit 20 Comparison of Passive Gaps 2018-23 by Investment Type

Domicile	Global Broad Category Group	Investment Type	Total Return %	Investor Return %	Fund Count	Gap pp
Australia	Equity	Exchange-Traded Fund	8.87	8.63	99	-0.24
Australia	Equity	Open-End Fund	7.45	7.03	444	-0.42
Australia	Fixed Income	Exchange-Traded Fund	1.04	-0.29	23	-1.33
Australia	Fixed Income	Open-End Fund	0.96	0.43	141	-0.53
Cross-Border	Equity	Exchange-Traded Fund	7.87	6.78	600	-1.09
Cross-Border	Equity	Open-End Fund	6.13	4.97	2,782	-1.16
Cross-Border	Fixed Income	Exchange-Traded Fund	-0.12	-0.70	200	-0.58
Cross-Border	Fixed Income	Open-End Fund	-0.15	-0.48	2,099	-0.33
Hong Kong	Equity	Exchange-Traded Fund	-2.70	-1.93	35	0.77
Hong Kong	Equity	Open-End Fund	-1.51	-2.58	86	-1.07

Source: Morningstar Direct. Data as of June 30, 2023.

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