

PassiveWatch

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Telephone calls may be recorded.

Welcome to the latest edition of BMO Multi-Manager PassiveWatch, an annual review and analysis of the passive fund industry. All data is from Lipper Global sectors and is calculated in total return terms in sterling for periods ending 31st December 2018.

This edition's analysis includes:

- 1 Tops and Bottoms** – a look at the range of performance of passive funds in the main Lipper Global sectors.
- 2 Sector Trends** – which are the best-selling passive sectors?
- 3 Popularity** – which sectors have the highest proportion of passive funds?
- 4 20 Years** – how have both active and passive funds compared over the long term?
- 5 Passive News** – we review recent developments which have caught our eye
- 6 Aspects of Selection** – things to be aware of when selecting passives (methodology, tracking error, costs, stock lending etc.)

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Past performance is not a guide to future performance.

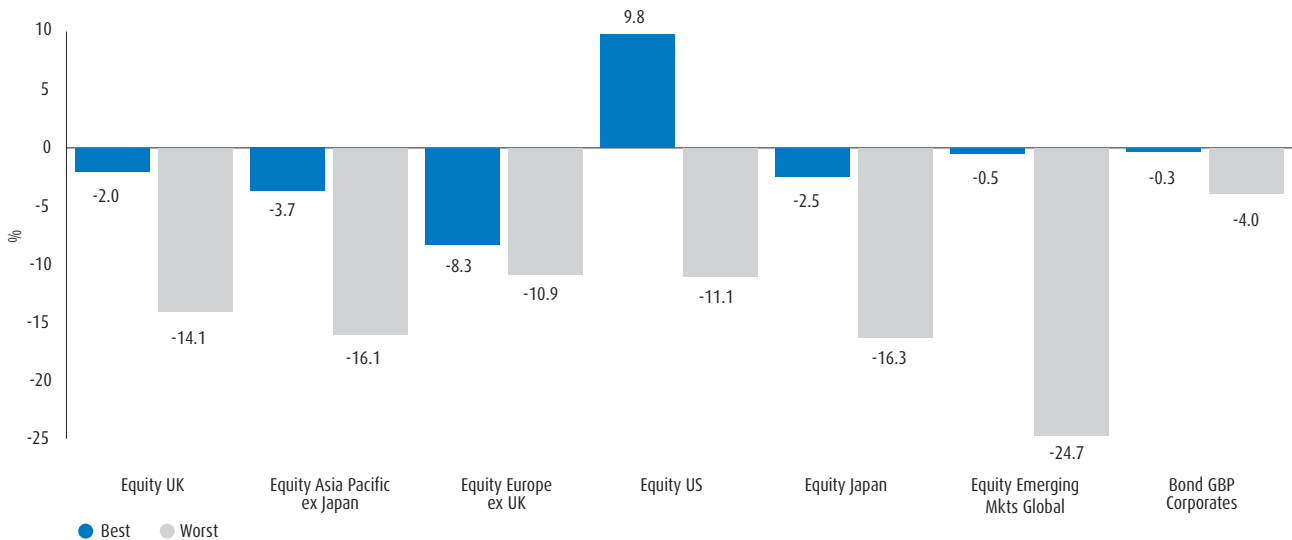
Stock market and currency movements mean the value of investments and the income from them can go down as well as up and you may not get back the original amount invested.

Executive Summary

1. There is a vast range of performance between best and worst passive funds due to the choice of index benchmark, charges, dividend policy, gearing, currency, tracking methodology and other features. For example, over just one year the best and worst passive funds in the Lipper Global Equity – US sector range from +9.8% and -11.1%!
2. The huge growth in the number of passives continued, increasing their influence on the average fund returns. Across the 7 market groups we surveyed, in 1998 there were a total of 47 passive funds. By the end of 2018 this was 431, an increase of over 9-fold.
3. Over 20 years, the average active fund has outperformed the average passive fund in three out of the five sectors analysable (two sectors do not have 20 years’ worth of passive fund data).
4. Also, over 20 years the average passive fund has underperformed when compared to a dominant reference index by an average of 54% over the 5 markets.
5. The best active equity managers have delivered as much as six times their index benchmark over 20 years.
6. An ‘agnostic’ approach that accepts that over any sensible investing period both can play a role at different times for different markets, would seem to be underpinned by the data.

1 Tops and Bottoms – a look at the range of passive performance in the main Lipper Global sectors

Best & worst return per sector in 2018



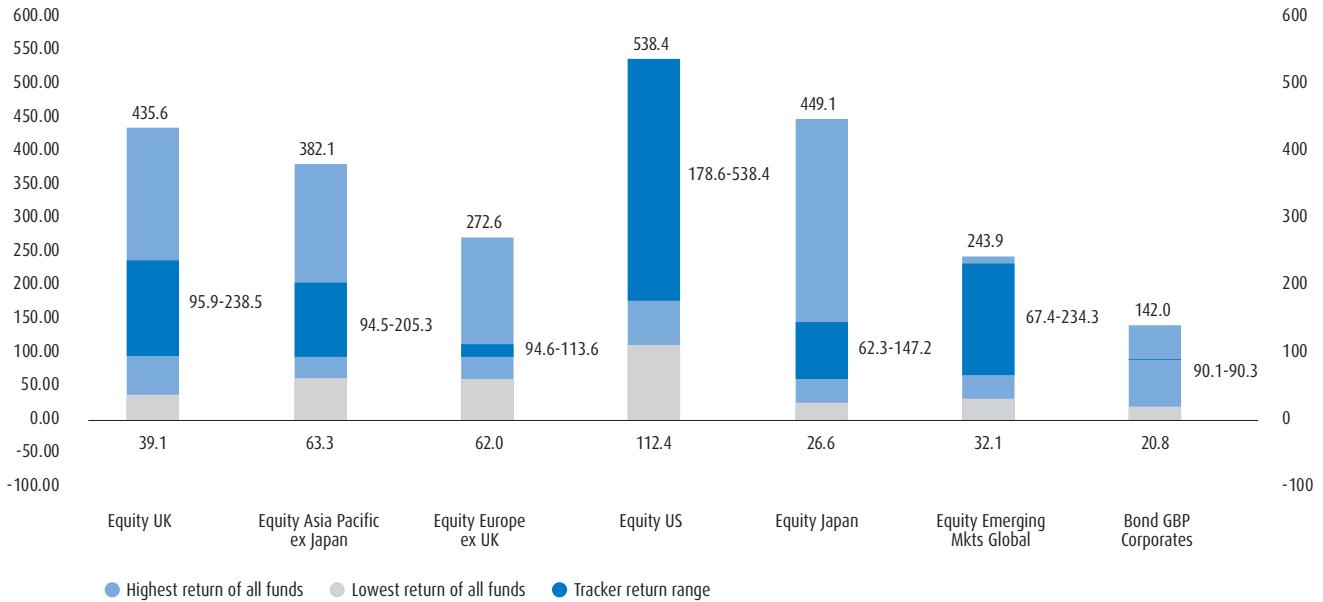
Source: Lipper as at 31-Dec-18.

The returns above are for passive funds only, showing the best and worst passives over one year. The difference ranges from only 4% in the Bond GBP Corporate sector to 24% in the Equity Emerging Markets Global sector, highlighting the importance of choosing the index you want and a good passive manager.

Over 10 years, the range of performance for both passive and active is shown below. From this we can see, as perhaps

expected, there is a smaller range of performance for passives, however the highest performers in the active world are almost always very significant outperformers and well worth trying to identify – the exception for this has been in the US where the best performing fund over the past 10 years was also a passive fund (albeit a tech heavy Nasdaq 100 tracker).

10 Years passive & active



Source: Lipper as at 31-Dec-18.

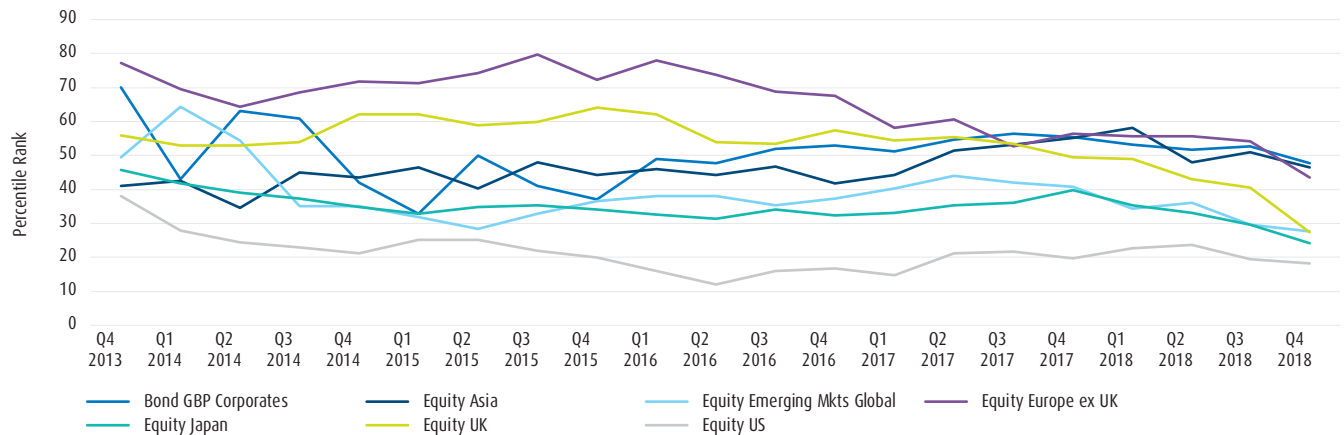
When was a good time to use passive?

We then took the top four passive funds by AUM for each sector and calculated a simple mean of their percentile rank on a rolling five-year window, to try and understand when passives outperformed their respective Lipper peer groups and when they did not. The results revealed a wide dispersion between the sectors.

for all of the major indices. For instance, the four largest European passive funds ranked as low 80th percentile for five years to the end of Q3 2015. Since then passive funds have surged to finishing 44th percentile, proving the recent five-year window to be a tough period for the average active manager. In fact, every passive average ranked in either the 1st or 2nd quartile for five years to the end of Q4 2018!

What's striking is how tough strong recent periods have been

Rolling quartile rank of top 4 AUM funds



Source: Lipper as at 31-Dec-18.

2 Sector Trends

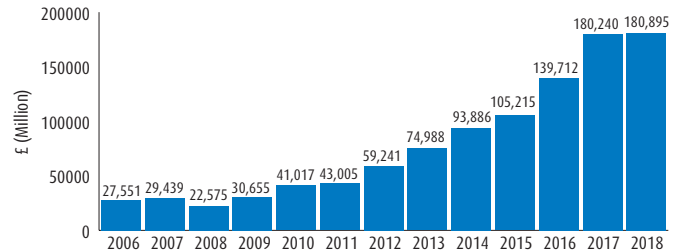
According to the latest available figures released by the Investment Association, retail sales of passive funds for the 12 months to the end December 2018 were £8.9bn, down 16.5% year on year. However, their overall share of industry funds under management rose to 15.7% with a total AUM of £180.9bn.

Passive fund growth

As we have in each edition, we have spent some time analysing 7 popular sectors within the Lipper Global universe and share the results below. We looked at growth in passives over 5, 10 and 20 years of data. The 7 Lipper Global sectors analysed were: Equity UK, Equity Asia Pacific ex Japan, Equity Europe ex UK, Equity US, Equity Japan, Equity Emerging Mkts Global and Bond GBP Corporates.

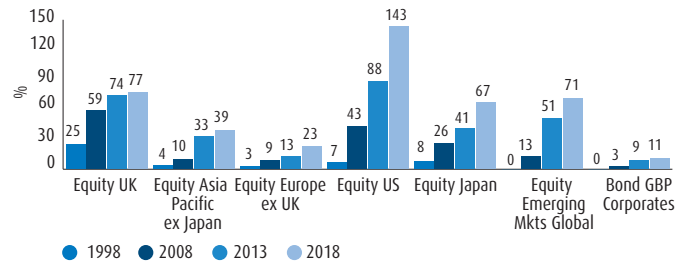
There were 1,869 funds in total registered for sale at the end of 2018 in the UK within these 7 sectors (up from 1,719 in 2017). 431 of these were passive vehicles (372 last year), around 23% of the total. Of the 431 passive funds existing today within the 7 Lipper Global sectors, 309 of them were in existence 5 years ago and 163 were around 10 years ago. The sector with the highest percentage growth in the number of funds available was Equity US which has grown from 7 funds 20 years ago, to 143 to choose from today.

Passive funds under management



Source: Investment Association as at 31-Dec-18.

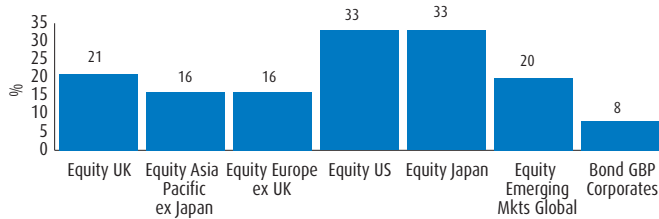
Number of passive funds



Source: Lipper as at 31-Dec-18.

3 Popularity - In which sectors are passives most populous?

Tracker funds as a proportion of sector

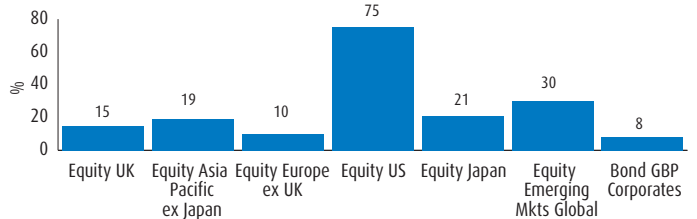


Source: Lipper as at 31-Dec-18.

Out of the 7 sectors we looked at, the one with the highest proportion of passive funds is still Equity Japan with 67 of its 204 funds (33%) passively managed. The sector with the lowest proportion of passive funds is still Bond GBP Corporates where 11 of 131 funds (7%) were passively managed.

Consistent with last year, there remains a huge number of indices being tracked. If we look at the UK for example, although the two most common indices are the FTSE 100 and FTSE All-Share, there are a further 13 indices being tracked. This gives a large dispersion of returns as a result, with the worst performing passive in the UK generating a return of -14.1% and the best returning -2.0% over 2018.

Number of indices



Source: Lipper as at 31-Dec-18.

The sector with the highest dispersion was Equity Emerging Markets Global at 24.7% between best and worst and the lowest dispersion of returns was Equity Europe with a dispersion of 2.6% between top and bottom.

Currency hedging can account for much of the difference in returns in some sectors, with leveraged ETFs a factor in some others and sector biases too such as NASDAQ. Selecting the appropriate index and analysing the costs of the product as a starting point is an obvious but important point to ensure the required market exposure is being taken. The method of tracking and tracking error are also important.

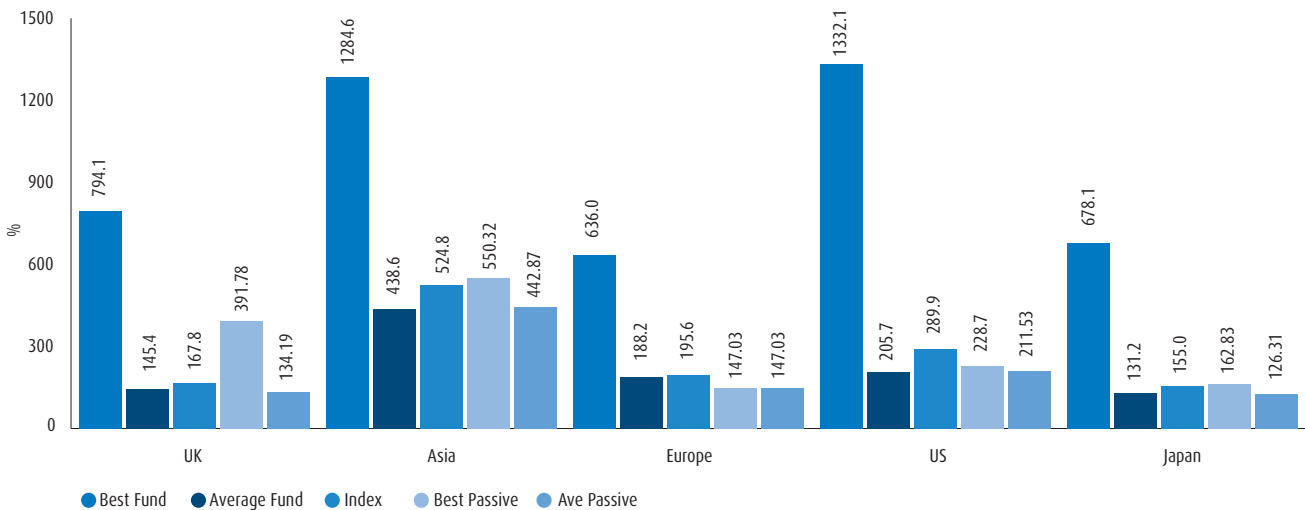
4 Returns over a 20 year period

We again reviewed both active and passive funds over a 20 year period. We had to remove Global Emerging Markets and £ Corporate Bond from the analysis at this point as there were no passive funds on offer in these two sectors 20 years ago.

We compared the performance of the best fund in each sector against the average fund (both active and passive), the index*, the average passive return and the best passive return.

The most striking observation is the scale of the outperformance of the best performing fund. In the US sector, the best performing active fund outperformed the average passive fund by a multiple of 6.3x, in the UK it was 5.9x and in Asia the best fund delivered a return 2.9x higher than the average passive fund.

20-year returns



*Indices used: FTSE All-Share, FTSE World Asia Pacific ex Japan TR GBP, FTSE World Europe ex UK TR GBP, S&P 500 TR and FTSE Japan TR.
Source: Lipper as at 31-Dec-18.

5 Passive News: A review of developments we have noticed over the last 12 months

Disruption in the technology sector

In September, index providers MSCI and S&P made their first significant changes to sector definitions since 1999, scrapping the telecoms sector and making way for a new communication services category. Sector classification can have a knock-on effect for other quantitative strategies that use factors such as value, growth and momentum, but remain sector neutral. As a result, JP Morgan published a report prior to the changes in September, stating that they expected around \$100bn in two-way turnover as quantitative and passive fund managers rebalanced their portfolios.

The reclassification of mega-cap names, such as Facebook, Netflix and Google, means that the technology sector now comprises just 20% of the S&P, down from 26% – a timely reminder to remain active when selecting your passive investments.

Market ‘highs’

In a year that saw the first industrialised nation in the world, Canada, legalise marijuana, the investment community are now able to invest in ETFs that track the share price of businesses manufacturing or distributing the newly-legalised industry. The Horizons Marijuana Life Sciences Index ETF sparked up an impressive 29% in the first 10 days of the year, before giving up some of these gains in a puff of smoke, ending the year 17% lower. Not such a relaxing ride...

There’s no such thing as a free lunch – but there is a free ETF...

The race to the bottom in costs is surely over with Fidelity Investment’s launching of the first ever free ETFs, with US-focused and non-US versions. The two index-tracking vehicles come

with a 0% management fee, although investors will pay a spread when entering and exiting the vehicle and Fidelity themselves earn on lending the stock to investors willing to short the market. The funds have already attracted over \$2bn in assets!

All bets are off for volatility ETFs

Equity markets may have suffered their worst yearly decline in over a decade in 2018, but this was not even close to the drawdowns in other financial markets.

Shorting volatility (i.e. betting on volatility remaining low) had become a lucrative trade for investors, with seemingly calm markets continuing undisturbed. As US bond yields spiked in late January and early February, equity markets began to wobble, sending market implied volatility sharply higher and causing significant pain for those predicting market volatility to remain low. As a result, many of the instruments used to facilitate the trade were closed and the most popular, ProShares Short VIX Short-Term Futures ETF, ended the year 92% lower! There were certainly no winnings for investors with client capital in these products in 2018.

6 Aspects of Selection – things to be aware of when selecting passives (methodology, tracking error, costs, stock lending etc.)

What factors can cause slippage in tracking or a high tracking error?

The biggest factors affecting the fund's tracking error are the tracking method employed by the manager (discussed below), the skill of the manager to track the chosen index within the constraints of their methodology and the accrual of ongoing charges, including the management fee, of the fund.

The impact of the ongoing charges alone, which when set against an index which assumes no annual fees, means that the tracking fund is destined to underperform the index being tracked. If we consider ongoing charges for passives within a typical range from 0.05% to 1.50% per annum. The impact of these different charges would compound over a 10 year period to 0.501% and 16.054% respectively and to 1.005% and 34.69% over 20 years.

Other factors which should be considered in regards to the fund's tracking error include cash flow management (avoiding any potential cash drag / dilution caused by cash flow going into or out of a fund) – sometimes a manager would use index futures to minimise this effect but as there isn't many liquid futures contracts available (in the UK, the FTSE 100 contract is by far the most liquid) the replication may not be accurate, potentially causing tracking slippage.

Taxation is also a potential issue, including withholding tax on any dividends received on the underlying shares.

Tracking methodology?

There are various different approaches that can be taken by a tracking manager to achieve a return similar to the index being tracked. Each of these methods have their own pros and cons.

1. Full replication

This method involves the fund holding all the stocks within the index in the same proportion as that index. For funds tracking the FTSE All-Share, this involves holding all 636 companies in the index. The main positive of this approach is that the resulting tracking error should be very low. Negatives include high costs due to the amount of dealing required to maintain the correct weights, particularly when factoring in illiquid stocks and changes to index constituents.

2. Stratified sampling

This approach involves buying the largest shares of an index in the same proportion and then holding a sample of shares from different industry sectors within the index, rather than holding every index constituent. The main positive here is that the dealing costs will be much lower as a result. The potential issues include a risk of a higher tracking error due to potential market cap and sector biases or even stock specific issues impacting returns versus the index.

3. Optimisation

Similar to sampling in that instead of holding all constituents of a benchmark, the manager holds a sample of stocks but different in that a sample of representative stocks are bought and when held together in a portfolio have similar risk/reward characteristics and the mix is highly correlated to the index. This method is relatively cheap to construct but can result in a higher tracking error.

4. Synthetic replication

With this method, the manager does not buy the physical shares of a company in the index but instead enters into a swap arrangement with an Investment Bank. This method is important for asset classes such as commodities as it is impractical to buy the physical exposure. This method offers a low tracking error and typically low fees but does introduce counterparty risk as a potential drawback.

Other things to be aware of:

Stock lending:

When considering a tracking fund, consider its ability to lend stock. This is where the manager would lend stock to a third party in return for a fee which then gets paid into the fund. Whilst fees from this practice can add a few basis points of performance, there is an element of counterparty risk introduced which needs to be considered.

Not all asset classes are ideal for passive investing in our view:

- Property is one example of this. Whilst it is possible to track REITS and property equities, the same cannot be said of gaining passive exposure to bricks and mortar investments. One of the main characteristics and attractions of property as an investment is its low correlation to asset classes such as equities and bonds. This diversification benefit is more prevalent in bricks and mortar investments whereas property equities tend to be highly correlated (at least in the short term) to equity markets.
- We feel that Corporate Bond investing is another area that is best obtained via a carefully selected active manager. In the period of ultra-low interest rates post the credit crisis of 2008, companies have (understandably) used this opportunity to issue debt. Some of this debt has been deployed as a productive use of capital but in other cases, cheap debt has been issued to finance share buy backs. Over this period, market making in the credit market has shrunk as investment banks have faced increasing regulation. We do have concerns around corporate bond liquidity in this regard and feel that an active manager would be better placed to weather any potential volatility.