Survivorship Bias

“History is written by the victors.”

Winston Churchill

When considering the utility of financial indices, inevitably, the issue of survivorship bias will be raised. The argument goes that managers/funds/companies in any given index at its commencement are then subject to the forces of natural selection. The stronger performers remain whilst weaker players exit the index for one reason or another: by construction (ie FTSE 100) or by ceasing to exist (ie fund closures) or by choosing to no longer participate (ie voluntary peer groups). The result of this natural selection process is that the performance of survivors in any given index is biased upwards and, as the performance lookback period increases, all those remaining in the index end up being above average.

Mathematically, survivorship bias occurs as, whilst the historical index values remain constant, the constituents do not. Outperformers join; underperformers leave. In this article, we consider: what survivorship bias is; what effect it has on the ARC Private Client Indices (‘PCI’); possible causes; and what it means for investors seeking to use PCI as a performance benchmark.

Survivorship Bias

By their nature, the components of financial market indices are dynamic. For example, only around 60 companies in the FTSE 100 today were in the index 10 years ago, as firms have started, grown, shrunk, been acquired and even wound up. As a result, the historical performance of the FTSE 100 is an amalgam of the performance of companies that have experienced differing fortunes. The composition of the FTSE 100 today reflects the 100 largest companies listed in the UK today. Laggards have been dropped; others have disappeared from the index through corporate activity. Thus it is reasonable to surmise that the performance of the “average” company in the FTSE 100 index today over the last, say, decade, will be higher than the FTSE 100 index over the same period. Why? Survivorship bias exists in most financial market indices.

What about fund peer groups? When creating a peer group of funds operating in a particular asset class, only those funds in existence today are considered. For example, five year performance statistics are only available for those funds in existence today that have survived for the whole period. It is reasonable to assume that one of the main reasons for fund closure is poor relative performance. Therefore it follows that using a peer group of funds may lead to investors having unrealistic return expectations, as the current choice of funds excludes those that performed poorly and were therefore closed or merged. Fund peer group averages include funds that have closed and therefore it is reasonable to assume that the average fund in existence today will have beaten the peer group average. Why? Survivorship bias exists in mutual fund universes.

The same concept can be applied to peer group averages where participation is voluntary, as is the case for the ARC Private Client Indices (‘PCI’). When PCI was launched in 2007 there were 20 discretionary investment managers who chose to be Data Contributors. The ARC Sterling PCI universe now has circa 60 Data Contributors and since launch some of the founder Data Contributors have been acquired, merged or decided to exit the peer group. This natural evolution in the PCI Data Contributor roster raises the question of whether evidence can be found for survivorship bias in the PCI data universe and if so how that should be accounted for by users of the various PCI series.
Survivorship Bias

Survivorship bias in PCI?
To investigate the extent of survivorship bias in PCI we have used data from the ARC Sterling Balanced Asset Private Client universe, which currently comprises in excess of 35,000 underlying portfolios.

The above chart plots and compares the cumulative return over 10 years of two groups of Data Contributors:
- Only those discretionary investment managers who are currently Data Contributors; and
- All discretionary investment managers who have been past and present Data Contributors.

For computational simplicity, the two performance series have been calculated assuming that Data Contributors are equally weighted. The results show that over the 10 years ended March 2019 current Data Contributors have outperformed by c. 5 percentage points.

Prima facie there appears to be a modest but persistent survivorship bias in the ARC Sterling Balanced Asset PCI of around 50 basis points per annum. Put another way, discretionary managers who no longer contribute to PCI were underperforming versus the combination of those who remained and those who joined.

Cause and Effect
So what might be the cause of the survivorship bias observed in the results above? Two possibilities are:

i) Data Contributors join PCI when their relative performance is strong; and/or
ii) Data Contributors leave PCI when their relative performance is weak.

To test these two ideas, the quartile position of each Data Contributor has been calculated when they first joined and when they left based on 12 month returns for each Data Contributor in the ARC Sterling Balanced Asset PCI universe.
Survivorship Bias

The chart on the left reveals that just over 40% of DFMs were 1st or 2nd quartile when they joined PCI and around 50% of Data CONTRIBUTORS were 3rd or 4th quartile when they left PCI.

Consequently there is no evidence to support either hypothesis based on short term performance.

In fact, the reverse appears to be true!

These findings are consistent with our anecdotal experience of the reasons Data Contributors cite when joining or leaving the PCI peer group. Discretionary investment managers tend to join in order to understand better their performance relative to peers (for good or bad) and to demonstrate their commitment to the principle of transparency. Data Contributors leave the peer group for a variety of reasons but most commonly as a result of merger and acquisition activity.

Thus, whilst it is true that, in aggregate, discretionary investment managers who no longer contribute to PCI had, on average, modestly underperformed relative to current Data Contributors, the data does not suggest that short term underperformance was the motivation to leave. Evidence for systematic survivorship bias being caused by the voluntary nature of PCI membership is weak.

Conclusions

In this article, we have examined evidence for survivorship bias in the PCI universe and sought to measure its impact.

- As expected, survivorship bias exists in PCI. We estimate that it is of the order of 50 basis points per annum.
- There is little evidence that the basis for this survivorship bias is discretionary investment managers seeking to “game the system” by joining when their short term performance numbers are strong and/or leaving when their performance numbers are weak.
- Investors should, when evaluating their performance versus PCI, consider their portfolio outcome against both the relevant PCI series and published quartile ranges, recognising that quartiles will tend to be higher.
- QuickCheck allows portfolio performance to be assessed versus the range of expected outcomes in the various PCI universes for any defined multi-asset class portfolio risk appetite.

For further information:
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QuickCheck is available from both Google Play and the App Store