



A deep dive into active investing and managerial skill

When investing in equities, investors have a choice to either invest passively by following a pre-defined index or invest actively by trusting a manager to generate above index returns. Investing passively produces index returns, while investing actively introduces the possibility of either underperforming or outperforming the broader market.

Active investing is a zero-sum game and someone's win is someone else's loss. Given a market index, the aggregate performance of all investors within that index by construction equals the index returns and passive investors achieve the index returns, so all non-passive participants also must on average achieve the index returns.¹

Of course, it is possible that there does exist some market participants who have skill and can demonstrate long running outperformance, but the difficulty is how to measure skill. Returns based performance measures have short comings when using both before and after fee returns. For 'after fee returns', two identical portfolios with different fees would seem to have different amounts of skill, even though the portfolios have the same stocks. 'Before fee returns' are only comparable for funds of the same size because as portfolios grow, outperformance becomes harder.

Given the difficulties in measuring managerial skill, we turn to the academic literature for some insights. In 2015, Berk and Binsbergen² published a paper that argued that manager skill should be calculated as the amount in dollars that a manager extracts from the market and their method accounts directly for manager size.³

Active management as a zero-sum game

Exhibit 1: Table of prices and market capitalization of example market.

	Price			Market Capitalization (shares times price)			
	Media Inc.	tech.com	RetailRus	Media Inc.	tech.com	RetailRus	Market
Start	5	25	10	50000	250000	100000	400000
Period 1	7	27	8	70000	270000	80000	420000
Period 2	10	24	11	100000	240000	110000	450000
Period 3	9	20	9	90000	200000	90000	380000
Period 4	10	21	9	100000	210000	90000	400000

(Source: Platypus, October 2019)

For simplicity, the market return over the sample period is 0% and the model simulates a market where managers are making active decisions, where they are taking profit, de-risking the portfolio, or simply indexing.

For example, as shown in Exhibit 2, M3 sells RetailRus at the end of Period 2, and then indexes the portfolio from then on. Similarly, M2 takes profits on Media Inc. at the end of Period 2. In contrast, M4 trades the portfolio each period. The number of shares available always adds to 10000.⁵ Take for example the starting number of shares for RetailRus: M1 and M3 own 1000 shares each, and M4 and M5 own 4000 each, making 10000 in total.

Exhibit 2: Number of shares owned by each manager at each period. For simplicity, we do not account for any trading costs.

	Media Inc.					tech.com					RetailRus				
	M1	M2	M3	M4	M5	M1	M2	M3	M4	M5	M1	M2	M3	M4	M5
Start	1000	1000	0	8000	0	1000	0	0	0	9000	1000	0	1000	4000	4000
Period 1	1000	1000	0	6500	1500	1000	0	0	1000	8000	1000	0	1000	1938	6063
Period 2	1000	1000	0	4000	4000	1000	0	0	1400	7600	1000	0	1000	3338	4663
Period 3	1000	222	244	3000	5533	1000	222	244	2500	6033	1000	222	244	1893	6640
Period 4	1000	222	244	2500	6033	1000	222	244	1200	7333	1000	222	244	5482	3051

(Source: Platypus, October 2019)

We calculate the returns to each manager, and the risk reward for each portfolio in the traditional way.

Exhibit 3: Alpha, tracking error, and information ratio of each manager. Remember M1 is an index manager.

	Market	M1	M2	M3	M4	M5
Alpha	0	0	18%	1%	6%	-2%
Tracking Error			20%	23%	8%	4%
Information Ratio			0.87	0.06	0.74	-0.66

(Source: Platypus, October 2019)

On each metric, M2 does better than the other managers however, this does not give the full picture. Both M2 and M4 believed that Media Inc. was undervalued and overweighted their portfolios accordingly. The allocations to the stock by both managers were different – M2 allocated more than M4 as a percentage of portfolio, but less in terms of a dollar amount, because M4 has more funds under management. Over the whole sample, M4 made many successful decisions, and extracted value at each period. Importantly for investors in M4’s strategy, the alpha was smoother, and repeatability of skill reduces the impact of timing an investment into the strategy.

We apply the method used by Berk and Binsbergen, which is simply alpha multiplied by funds under management at the start of the period, to compare the managers.

Exhibit 4: Alpha multiplied by funds under management for M1 to M5.

	M1	M2	M3	M4	M5	Total
Start	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Period 1	\$ -	\$ 1750	-\$ 2500	\$ 4000	-\$ 3250	\$ -
Period 2	\$ -	\$ 2500	\$ 2429	\$ 16027	-\$ 20956	\$ -
Period 3	\$ -	\$ -	\$ -	\$ 885	-\$ 885	\$ -
Period 4	\$ -	\$ -	\$ -	\$ 551	-\$ 551	\$ -
Total	\$ -	\$ 4250	-\$ 71	\$ 21463	-\$ 25642	\$ -

(Source: Platypus, October 2019)

The total value extracted from the market is zero for each period, and in total. Active management is a zero sum game: for every successful manager there is at least one who is unsuccessful. From this measure, M4 has extracted the most value, and is the most consistent, while M2, who has done well using traditional metrics over the whole period, has only extracted value in two of the periods. When investing in an active manager, alpha multiplied by funds under management can help investors compare the consistency of managerial skill across time.

The Platypus Australian Equities Portfolio

Platypus has been managing equity portfolios since 1999 and as at August 2019, the annual pre-fee alpha compared to the S&P/ASX 300 was 4.58% p.a.* So, using metrics similar to those in Exhibit 3, the portfolio has performed well.

As a measure of managerial skill, we want to calculate the total value extracted by Platypus from the market however, there are several possibilities investors should consider. Specifically, how much of the alpha is simply due to taking market risk. A portfolio with a beta of 1.1 would be expected to outperform the index by 10% in upmarkets and underperform by the same amount in down markets. The market has gone up since 1999 which is something we need to account for and in addition to this, over this same period, investors have gained access to cheap style-based portfolios. Investors can now buy a group of value stocks, or stocks with higher growth. In our measurements, we also want to account for these portfolios. We raise the bar and use portfolios that are both available cheaply as exchange traded funds (ETFs), and style indices that are calculated by external providers. All the benchmarks have different starting and end dates, so we use the technique described in Berkand Binsbergen to account for this.

Exhibit 5 shows the results and the Platypus portfolio has extracted nearly half a billion dollars from the market.

In the first column is the unadjusted amount, not accounting for anything else. It is the outperformance of the portfolios multiplied by FUM, compared to the S&P/ASX 300 accumulation index.

The second column accounts for the beta of the portfolio. Maybe the amount extracted was really because we had a higher beta portfolio. A portfolio with a beta of 1.2 is expected to outperform rising markets by 20%. The amount in the Beta Adjusted column shows this is not the case. In fact, the amount increased.

In the ETF column, we compare the alpha to a collection of ETFs.⁶ Some investors don't simply hold the index and try to achieve better returns using a selection of ETFs. We also extract value compared to a collection of ETFs.

Finally, we compare the amount extracted to a selection of MSCI style indices.⁷ One possibility is that the amount extracted is simply because we have a large amount of growth in our portfolio, or we are simply buying momentum. Accounting for these factors, the Platypus portfolio alpha compared to these style indices is higher than the alpha compared to the S&P/ASX 300, highlighting the stock specific success of the portfolios through time.

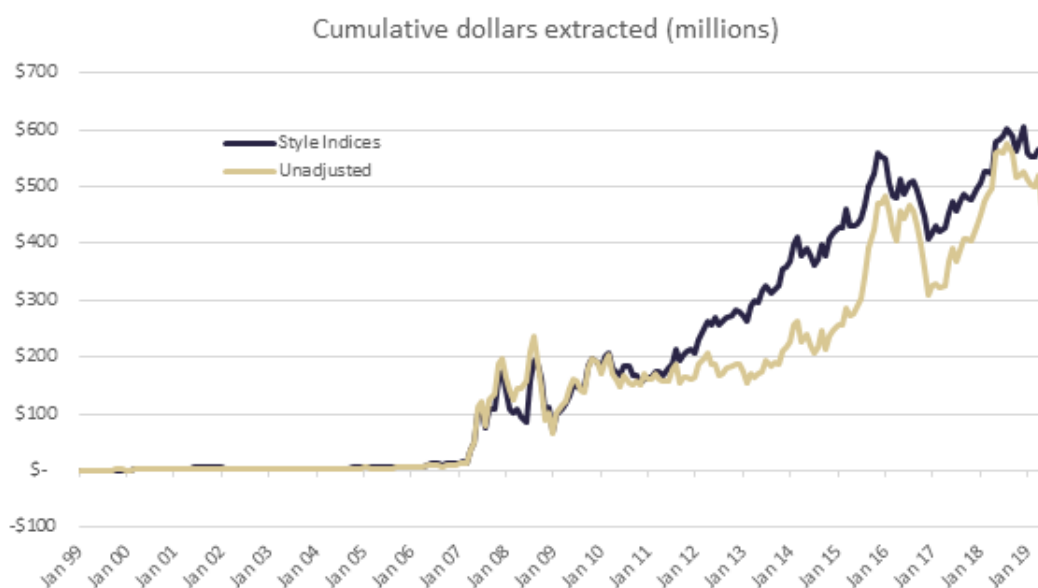
Exhibit 5: Dollars extracted from the market since inception, accounting for inflation.

	Unadjusted	Beta Adjusted	ETFs	Style Indices
Total Amount Extracted	\$ 454,523,522	\$ 478,385,432	\$ 546,263,185	\$ 560,479,696
Average Per Month	\$ 1,847,657	\$ 1,944,656	\$ 2,220,582	\$ 2,278,373

(Source: Platypus, October 2019)

To check our results, we see if the value added from Platypus is concentrated in particular periods. The investment process may have worked very well during certain periods, but not so well as others. Investors deserve consistency in returns and if the managerial skill of Platypus were changing over time, we would expect the cumulative value add to have a clear peak in the distant past however this is not the case – see Exhibit 6.

Exhibit 6: Cumulative value added from the Platypus portfolio using the style indices as a benchmark, since inception, accounting for inflation. Platypus received its first institutional mandate in 2007.



(Source: Platypus, October 2019)

Key takeaways

Platypus has both systematic and fundamental investment teams, and this research is one example of how both teams work together. Applying thoughtful analysis to the Platypus portfolios shows that the fundamental team has extracted approximately half a billion dollars from the market since 1999. Key takeaways from this analysis are:

The cumulative dollars extracted (Exhibit 6) shows that the Platypus strategy has consistently extracted value over time with all levels of funds under management, up to and including \$3 billion. We expect this cumulative value add to continue to increase and will preserve capacity to make sure this is the case.⁹ Platypus returns are consistent through time and the cumulative outperformance achieved over the last 2 decades did not come from one period in time, or when Platypus managed smaller portfolios.

Investing in the Platypus strategy cannot simply be replicated by taking passive positions in cheap style portfolios as the value extracted came from stock selection.

From the perspective of Berk and Binsbergen, the Platypus portfolios have demonstrated managerial skill over the past twenty years.

1. See Sharpe, W. F. (1991). The arithmetic of active management. *Financial Analysts Journal*, 47(1), 7-9.
2. Berk, J. B., & Van Binsbergen, J. H. (2015). Measuring skill in the mutual fund industry. *Journal of Financial Economics*, 118 (1), 1-20.
3. Note that the method of Berk and Binsbergen conflates the managerial skill of stock picking and the managerial skill of raising funds under management.
4. In reality an index changes over time through index additions and deletions, IPOs and seasoned equity offerings. Each of these is a source of potential alpha for the active manager. See for example, Pedersen, L. H. (2018). Sharpening the arithmetic of active management. *Financial Analysts Journal*, 74(1), 21-36.
5. The number of shares does not add to 10000 due to rounding errors.
- *. Past performance is not a reliable indicator of future performance.
6. We use a combination of iShares Edge MSCI Australia Multi factor, iShares Edge MSCI Australia Min Vol, iShares Core S&P/ASX 200, iShares S&P/ASX 20, iShares S&P/ASX Dividend Opportunities, iShares S&P/ASX Small Ordinaries, Vanguard Australian Shares Index, Vanguard Australian Shares High Yield, Vanguard MSCI Australian Large Companies Index, Vanguard MSCI Australian Small Companies Index.
7. Including value, growth, small cap, low volatility, quality, and momentum.
8. We have performed a detailed capacity analysis for all our strategies. Contact Gary Adamson for more details.

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