What's In a Quartile?

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INTRODUCTION

Private equity funds often claim that their performance is in the "top quartile" of their peer group. We hear this claim so often, in fact, that we sometimes wonder where the other three out of four funds are.

In this research brief we explore the theoretical and practical validity of top quartile performance. We compare the top quartile of funds as determined by two different, but very common, performance statistics. We answer the question of how many funds can truly be in the top quartile. Finally, we provide a guide for just how meaningful *early* top quartile performance is as a predictor of *ultimate* top quartile performance.

DATASET

In this brief, we analyzed the funds in the Venture Economics database. Our dataset included all venture capital and leveraged buyout funds from vintage years 1980-2003. After applying various filters to ensure reasonable cash flow patterns and consistently updated valuations, our dataset included a total of 1,545 funds.

For the analysis of how well current top quartile performance predicts ultimate top quartile performance, which is illustrated in Exhibit 3, we limited our fund sample to funds with ten years of operating history. Accordingly, that analysis included only funds from vintage years 1980 through 1994 and had a total of 723 funds.

METHODOLOGY

We measured the performance of each fund in our dataset at each year of its life, beginning with the first full year after the fund's vintage year. For example, for a fund from vintage year 1985 we first calculated performance as of the end of calendar year 1986 and then for each calendar year thereafter. We then categorized each fund within a quartile based on its performance relative to other funds in the same strategy (venture capital funds separate from leveraged buyout funds) and the same vintage year. Funds with performance equal to or above the 75th percentile of funds in the same strategy and vintage year were classified as "top quartile." Repeating this exercise for each fund in each calendar year, we generated a complete listing of each fund's quartile ranking in each year of its life.

We repeated the quartile classification twice for each fund in the dataset using two different but common performance measurement statistics. The first statistic we used was the internal rate of return (IRR), which is the discount rate that sets a fund's net present value of cash flows equal to the present value of its current valuation. The second statistic we used was the times-money-earned (TME) ratio, which equals the sum of the fund's previous distributions of capital plus the current fund valuation divided by the sum of the fund's previous invested capital.

Given a quartile ranking for each fund at every year of its life for two commonly cited performance statistics, we were able to draw some conclusions regarding the true number of funds who could claim top quartile performance. We were also able to draw conclusions regarding the value of performance statistics early in a fund's life.

RESULTS

The two performance statistics, internal rate of return (IRR) and times-money-earned (TME) ratio, resulted in different quartile rankings for some funds. As shown in Exhibit 1 below, the degree of overlap in the quartiles (instances where the quartile rank of a fund's IRR equaled the quartile rank of its TME) ranged between 77% and 89%, appearing to converge to 84% in years nine and ten.

Exhibit 1: Proportion of Overlap in Quartile Ranking by IRR and TME

Year	1	2	3	4	5	6	7	8	9	10
Proportion of Overlap	77%	89%	88%	87%	86%	85%	83%	82%	84%	84%

Overlap of less than 100% implies that a given fund may be top quartile with respect to IRR but not be top quartile with respect to TME, and vice versa.

Although, by design, in any one year only 25% of the funds were designated to be top quartile, funds had a much higher probability of being ranked within the top quartile *at some point in their lives*. This is because funds tend to move into and out of the top quartile over time. To illustrate this effect, we measured the probability of a fund being top quartile at any time during its life. Those probabilities are show in Exhibit 2 below.

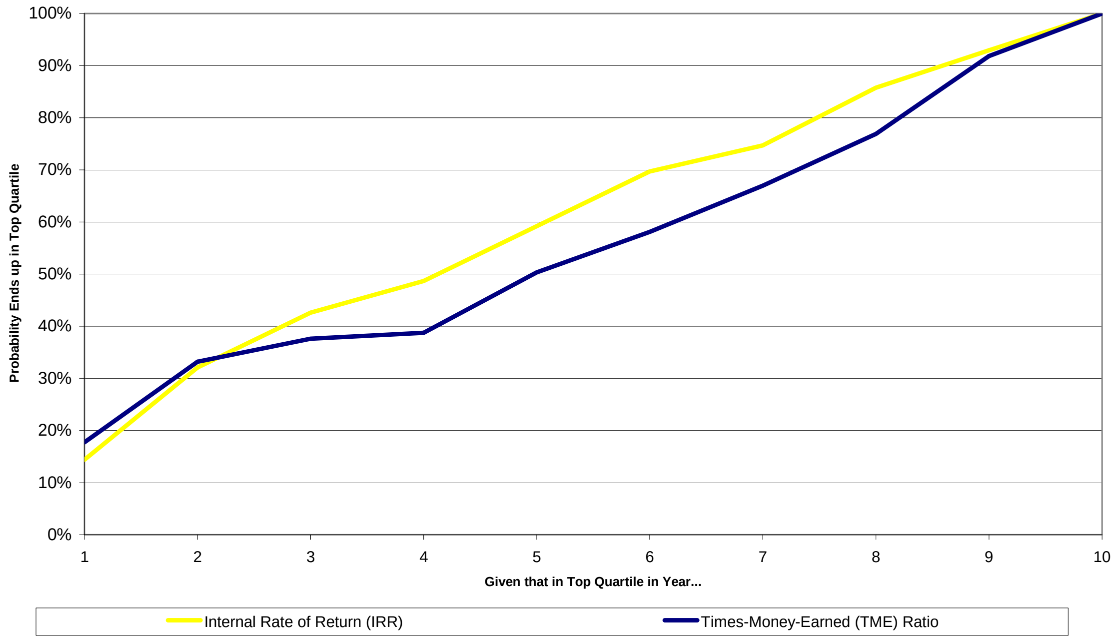
Exhibit 2: Probability a Fund was Top Quartile at Least One Year of its Life

	Top Quartile IRR	Top Quartile TME	*Either* Top Quartile IRR *Or* Top Quartile TME
Probability	58%	57%	62%

Above, Exhibit 2 shows that a surprising 62% of funds in the dataset were ranked in the top quartile for their strategy and vintage year at some point during their lifetime either by IRR or TME. This may explain the large number of funds in the market claiming to be "top quartile funds."

One point made above bears repeating: funds tend to move into and out of the top quartile over time. We would expect that as funds approach maturity those that are top quartile are more likely to remain in the top quartile as their returns (and the returns of other funds) are "locked-in" and they begin to wind down and liquidate. To quantify the amount of certainty one had when evaluating early returns, we measured the likelihood that top quartile funds at each point in time would ultimately end up in the top quartile after ten years. For this experiment we limited our dataset to funds with a minimum age of ten years, which excludes funds from vintage years after 1994. Exhibit 3 shows the results.

Exhibit 3: Probability of Finishing in the Top Quartile



Source: Alignment Capital Group and Venture Economics

As shown above in Exhibit 3, funds that were in the top quartile after their first year of investing had less than a 20% probability of ultimately being top quartile funds at the end of ten years. This is lower than the ex-ante probability of choosing a top quartile fund at random (25%). As expected, over time the relative information contained in current performance increased; after year five the likelihood of a top quartile fund ending up in the top quartile was greater than 50%. This just-better-than-even probability is very telling given that most funds have an investment period of five years, and many fund managers begin to raise a subsequent fund around the third year.

A useful rule of thumb from Exhibit 3 is that, beginning in year five, the probability that a top quartile fund remains in the top quartile seemed to roughly equal the fund's age multiplied by 10%. For example, if a fund was in the top quartile in year seven there was around a 70% probability that it was ultimately a top quartile fund.

CONCLUSION

In this research brief we investigate the concept of "top quartile performance." Our results show that being in the top quartile at some point during a fund's life is not a particularly distinguishing characteristic. Indeed, over 60% of the 1,545 funds from our dataset, constructed of venture capital and leveraged buyout funds from the Venture Economics database, could claim to be in the top quartile at some point in their histories. Additionally, early top quartile performance was not a good predictor of ultimate top quartile performance. Before the end of its fifth year, a fund that had top quartile performance had less than a 50% probability of ending up in the top quartile.

Alignment Capital Group is a full-service private equity consulting firm based in Austin, Texas. The firm's mission is to understand private equity as an asset class in a portfolio context, and thus to assist our clients in making optimal investment decisions.

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